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ATTACHMENT A

MASS ESTIMATES OF PCBs IN UPPER ESTUARY SEDIMENT NEW BEDFORD HARBOR

DRAFT

MASS ESTIMATES OF PCBS IN UPPER ESTUARY SEDIMENT NEW BEDFORD HARBOR

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Balsam Project 6292.03/2093

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MASS ESTIMATES OF PCBS IN UPPER ESTUARY SEDIMENT NEW BEDFORD HARBOR

1.0 INTRODUCTION

Balsam Environmental Consultants, Inc. (Balsam) has undertaken a study to estimate the mass of polychlorinated biphenyls (PCBs) in upper estuary sediment of New Bedford Harbor. The information contained within this report may be helpful, among other things, in characterizing the nature and magnitude of sediment migration and depositional patterns within the upper estuary, allowing more objective evaluation of potential remedial alternatives, and initially quantifying the amount of certain PCBs present in portions of sediment from this area. This report presents and summarizes the findings of our study to date.

2.0 BACKGROUND

Analytical data primarily relied upon for this study were taken from the following two sources:

- Battelle/NUS Corporation (Battelle/NUS) Sediment Sampling in the Upper Acushnet River Estuary, June 1985.

- U. S. Army Corps of Engineers (USACE) Sediment Core Sampling, Acushnet River Upper Estuary, August to October 1985.

Seven locations within the upper estuary were sampled during the Battelle/NUS sediment sampling program, while 49 stations were sampled by the USACE. A total of 51 sampling stations were used herein, as shown on Figure 1. The 51 stations consist of 45 USACE stations and six Battelle/NUS stations. Four of the 49 USACE stations were not used because they exist in the same approximate location as four of the Battelle/NUS stations and data from the latter sampling program were judged to be more reliable based on data validation considerations.

The Metcalf & Eddy (M & E) report entitled "Acushnet Estuary PCBs Data Management Final Report" was reviewed and compared with the Battelle/NUS and USACE data. Due to the use of varying analytical methods, reporting techniques, precision of sampling locations and sampling depth intervals for the data presented in the M & E report as compared to data collected by Battelle/NUS and USACE, it was only possible to qualitatively compare interpretation of the Battelle/NUS and USACE data with M & E information collected from the harbor. As such, the M & E data were not used in performing this quantitative mass estimate assessment.

During completion of this report, Balsam received an additional data set describing PCB concentrations in an area of the upper estuary commonly referred to as the "Hot Spot". This sampling program, entitled "Chemical and Physical Analysis of Sediments From Hot Spot Area," dated November 1987 and prepared by the USACE, focused on better defining PCB estuary sediment concentrations in an area approximately twenty acres in size located due east and southeast of the Aerovox, Inc. facility. A review of this and other USACE reports indicated that the USACE and the U.S. Environmental Protection Agency (EPA) had acquired additional data to more accurately resolve the extent of the Hot Spot.

In performing the mass estimates described in this document, Balsam compared data from the November, 1987 USACE report discussed above with those from the same area collected during the 1985 USACE sampling program. The November, 1987 data were collected at a greater areal density than those of the 1985 sampling program and focused on the approximately 20-acre area discussed above. The spacing of the sampling points within the relatively small 20-acre area allowed interpretation of sediment quality data to a greater resolution than that of the 1985 sampling program. Never-the-less, the sediment quality trends observed from the 1985 sampling program data were consistent with those observed from the November, 1987 sampling program data. Accordingly, because inclusion of the November, 1987 sampling program data into the sediment modeling performed to date would have required reconstruction of the sediment quality models without achieving significantly higher resolution of sediment quality description, data from the USACE 1985 sampling program were used to conduct the work described herein.

Sampling performed by the USACE as part of the 1987 Hot Spot assessment indicated the presence of elevated levels of PCBs (4,000 ppm or more) at depths greater than twelve inches. Previous sampling programs have not indicated

such a PCB depositional occurrence. If additional information is received regarding this sampling program, an assessment could be made as to whether these elevated PCB concentrations do exist in deeper sediments or whether the elevated reported PCB concentrations resulted from inadequate sampling or laboratory protocol.

Balsam also recently received some additional sediment sampling results for total PCBs from a Battelle study conducted more recently in New Bedford Harbor. Review of this information indicated that sediment samples from only two sampling locations within the upper estuary were analyzed during this Battelle study. Due to the limited amount of data applicable to the upper estuary, as well as the use of modified analytical protocol to perform chemical analyses, these data were not utilized to support this assessment effort.

To provide a basis for estimation of contaminant effected areas in the upper estuary, a base map was developed depicting the limit of the study area and sample station locations. This base map was prepared from United States Geologic Survey (USGS) quadrangle maps, topographic maps prepared by the USACE as part of their Engineering Feasibility Study, and sample station maps prepared by the USACE and Battelle/NUS. The extent of the study area was defined by mean high water elevation, excluding the eastern salt marsh existing in Acushnet and Fairhaven. On this basis, the upper estuary study area was measured to be approximately 189 acres.

2.1 BATTELLE/NUS SAMPLING PROGRAM

The Battelle/NUS sampling program was conducted in the upper estuary during June 1985. Sediment cores were collected from the sampling stations, as shown on Figure 1. Samples were reportedly obtained by driving hollow core tubes into the sediment to approximately 5-foot depths. The tubes were capped and frozen

after withdrawal. With the exception of a core sample from one sampling station, which was cut in 6-inch intervals, the cores were cut in 1-foot sections. The sediment core sections were subsequently analyzed as discrete samples.

Three Environmental Protection Agency (EPA) contract laboratories performed the chemical analyses of these samples. Samples were analyzed for Hazardous Substance List (HSL) organics compounds, including PCBs, and HSL inorganic compounds. Sediment samples were reportedly analyzed using EPA-approved methods as appropriate for the analyte.

Prior data validation conducted for this sampling program indicated that some of the PCB and inorganic compound analytical results should be considered approximate. Furthermore, there were some reported difficulties in laboratory differentiation between Aroclors 1016/1242, such that this Aroclor group was collectively defined as Aroclors 1016/1242. Furthermore, the presence of Aroclor 1248 was often reported; the source of this Aroclor is believed to be "weathered" Aroclors 1016/1242 and Aroclor 1254.

Based on the interpretation of PCB Aroclor types present in upper estuary sediments by the laboratories performing analyses on the USACE or Battelle/NUS sediment sampling program samples, Balsam categorized both USACE and Battelle/NUS PCB analytical data into four groups: Aroclor 1016/1242, Aroclor 1248, Aroclor 1254 and total PCBs. In some instances, the mass of total PCBs estimated to be present in a portion of the study area does not equal the sum of Aroclors 1016/1242, Aroclor 1248 and Aroclor 1254 estimated to be present in the same portion of the study area. These differences result primarily from variations in the results of analytical methods used to quantify total PCBs as compared to inaccurate estimation of the mass of individual PCB Aroclors.

2.2 USACE SAMPLING PROGRAM

The USACE conducted a sediment core sampling program at 49 sampling stations within the upper estuary from August through October of 1985. These sampling stations are as shown on Figure 1.

Balsam has been unable to obtain protocol for sampling methodology or sample selection procedures of the USACE program. However, results of the chemical analyses suggest that, in most cases, the sediment cores were sectioned into 6-inch or 12-inch intervals.

Seven laboratories performed chemical analyses on sediment samples collected during this program. Samples were analyzed for either full or partial HSL organic and inorganic compounds, as well as some physical parameters.

Prior data validation conducted by Balsam for the USACE sampling program indicated that:

- Approximately 1/3 of the results should be considered approximate;
- Approximately 1/5 of the results should be considered acceptable as reported; and
- Approximately 1/2 of the results had insufficient or unavailable data to access their validity.

For this study, data were used as they were reported by the analytical laboratories.

3.0 METHODOLOGY

Review of the analytical results from the Battelle/NUS and USACE sampling programs were primarily reported in 1-foot intervals, and data generally were presented to a depth of 48" beneath the sediment-water interface. Therefore, data for each constituent studied were plotted by 1-foot intervals at their respective sampling stations. Figures 2 through 9 present PCB concentrations in sediment for the 0"-12", 12"-24", 24"-36", and 36"-48" intervals. Review of these figures indicates that for a given constituent, concentrations were occasionally not reported by the laboratory for the specific 1-foot intervals used herein. This absence of data may have been a result of sample collection from an interval other than those generally used (e.g., 6"-13" rather than 0"-12"), or no collection or analysis of a sample from a given depth interval. Consequently, certain assumptions and estimates, as described below, were made to assign constituent concentrations to the four depth intervals discussed above where data gaps occurred.

Values were initially assigned to the 0"-12" interval at each sampling station. As noted on Figures 2 through 9, some values were extrapolated from those that were reported for an overlapping or fractional interval. For example, if data from a 0"-4" or 0"-16" interval were available for a sample station, these data were used to extrapolate a constituent concentration value judged to be representative of the 0"-12" interval. Similarly, there were some sampling stations where no data were available for any portion of the 0"-12" interval. In these cases, the constituent concentrations assigned were estimated as the average of concentrations assigned to the 0"-12" interval for adjacent sampling stations.

To assign constituent concentrations to depth intervals beneath 0"-12" where such data were absent, average factors of constituent concentration reduction from 0"-12" as compared to the three deeper sediment intervals were calculated. Constituent concentration factors for each constituent studied were estimated using data from sampling stations which described the constituent concentration from the sediment surface to a depth of 48 inches without data gaps. By utilizing such data, generalized constituent concentration trends were identified for upper estuary sediments.

In some instances, a total PCB concentration was reported by analytical laboratories without information describing the concentrations of the individual PCB Aroclors present in a sample. In these instances, the concentrations of PCB Aroclors were estimated as a percent of the total PCB concentrations based upon the average percent each Aroclor contributed to the total PCB concentration for each depth interval using unmodified data from the upper estuary sampling programs.

In a few instances, replicate samples were analyzed for a given depth interval. In these cases, the constituent concentration assigned was the average concentration of the replicate samples.

Concentrations which were reported as "ND" (not detected) by analytical laboratories were plotted on Figures 2 through 9 as one-half of the analytical detection limit when the detection limit was reported. If a detection limit was not reported, one-half of the contract required detection limit (CRDL) was used; the CRDL for Aroclor 1254 is 0.160 parts per million (ppm), and the CRDL for Aroclors 1016, 1242 and 1248 is 0.080 ppm.

The extrapolated, estimated, averaged, and unmodified concentrations used for the mass estimates performed herein are shown on Figures 2 through 9. Using

these data, mass estimates of the constituents were made using two techniques described below.

3.1 POLYGON METHOD

The upper estuary was divided into polygons, using the Thiessen polygon technique, as shown on Figure 10, such that each polygon contained one sampling station. This is thought to be an acceptable technique for assigning relative sub-areas to sampling stations within a larger sampling station matrix. The shape of each polygon was assumed constant with depth throughout each depth interval. The total volume of each polygon per depth interval was then calculated as the product of the interval depth and the area of the polygon. Polygon areas were estimated by polar planimetry. Using this technique, each constituent concentration in a given depth interval and polygon was assumed constant throughout the entire volume of the polygon in which it was located.

The mass of soil in each depth interval of each polygon was then calculated assuming a dry density of the harbor sediment to be 0.75 grams per cubic centimeter (g/cm^3). The rationale for use of 0.75 g/cm^3 is provided below. Thus, the volume of soil in each polygon was multiplied by 0.75 g/cm^3 to estimate the mass of soil in each depth interval of each polygon.

Since the constituent concentration in a sample from one depth interval was assumed to be representative of the average concentration throughout that same depth interval of the respective polygon, the mass of each constituent in each polygon was estimated as the sum of the products of the dry soil weight and the constituent concentration for each depth interval in a polygon. Thus, mass estimates were made in 12 inch intervals for each constituent for a depth of 0" to 48" beneath the sediment-water interface.

The mass sediment and the constituent mass estimates resulting from the approach described above are sensitive to the value assumed for sediment dry density. Since specific data for dry density of New Bedford Harbor upper estuary sediment were not available at the time of report preparation, this parameter was estimated from two prior estuarine studies conducted by Leavitt (1980) and Truitt (1986) and a review of New Bedford Harbor sediment physical characterization data.

The data from Leavitt (1980) were developed from sediment samples collected within the Great Bay estuary of New Hampshire, while those from Truitt (1986) were from the Duwamish Waterway estuary of Washington. In the former case, dry density was estimated for 21 sediment samples in which sediment content (by volume) and water content (by weight) were presented. Those estimates were conducted using standard equations of soil mechanics, as presented in Peck, et. al. (1974).

Using the data from Truitt (1986), dry density was estimated for four sediment samples in which void ratio and wet bulk density were reported. These estimates also required a value of specific gravity for the estuarine sediments. An average value was taken from data collected from representative New Bedford Harbor samples and data presented in Condike (1986) and USACE (1987). These estimates were also calculated using standard soil mechanics equations.

Assumptions made in the estimates from both data sources discussed above were as follows:

- o The sediment was 100% saturated.
- o Organic content in a sample was a component of the sediment fraction of the sample.
- o There was no gaseous phase in the samples.
- o The density of the estuarine water was 1.013 g/cm^3.

In review of the data sources discussed above, off-site sediment physical characterization data were in general rejected if they were not representative of the sediment characteristics believed to exist in New Bedford Harbor. Criteria considered were that the sample had to consist primarily of silt and clay and had to be obtained from within approximately 0"-12" of the sediment-water interface.

A mean value of 2.34 was calculated and used as the specific gravity of the estuarine sediment. The average dry density calculated from Leavitt (1980) was 0.79 g/cm^3 while the average value calculated from Truitt (1986) was 0.71 g/cm^3. Therefore, these values were averaged and 0.75 g/cm^3 was estimated as the average dry density of sediment in New Bedford Harbor.

In the absence of additional data, 0.75 g/cm^3 was assumed to be the sediment dry density throughout the 0"-12" interval. Based upon a review of the literature conducted as part of this study, it is likely that a dry density gradient exists within this interval and that the dry density likely increases with depth. However, further review of the literature indicated that this parameter is not

likely to change significantly within the 0"-12" interval, and the use of a uniform average value for this depth interval is not likely to significantly affect mass estimates. Some increase in sediment by density is expected to occur in the 12" to 48" interval. However, because PCB and heavy metal concentrations decline significantly below the 0" to 12" sediment interval, the overall effect on the estimation of contaminant masses is expected to be relatively small.

Additional assumptions were used in making the mass estimate calculations conducted herein. These assumptions are presented in Appendix A.

To manage the data base and associated mass calculations, a computer program was developed to conduct the mass estimate calculations discussed above. The output from this computer program is included as Appendix B. This output uses the same polygon designations as those shown on Figure 10. It also contains a "Notes" column which lists abbreviations for the assumptions and estimates made in assigning constituent concentrations to depth intervals in each polygon, where necessary, as described below:

- "Ext." - Indicates an extrapolated value estimated from data present for an overlapping or fractional interval. For example, dated from 0"-4" or 0"-16" were extrapolated to describe the 0"-12" interval.

- "Adj." - Indicates an averaged value using data from the 0"-12" intervals of adjacent sampling stations when there was a data gap in a concentration for a given 0"-12" interval at a polygon.

- "Est." - Indicates an estimated value, used to fill a data gap, that was based on average trends observed in concentration reduction with depth relative to the 0"-12" interval using unmodified data from the study area.

- "Comp." - Indicates an amount of PCB Aroclor estimated as some fraction of total PCBs when only total PCB data were reported. These estimates were based on calculations of average PCB Aroclor components using unmodified data from the study area.

- "Ave." - Indicates an average value used where replicate samples were analyzed from the same depth interval.

The program output should be consulted in conjunction with Figure 10 to review the parameter concentrations assigned to each polygon per depth interval.

3.2 ISOPLETH METHOD

Using the same data as those employed for the polygon mass estimation method, concentration isopleths for the 0"-12" sediment interval were prepared for each PCB Aroclor. These isopleths are shown on Figures 11 through 14, and were computer generated using weighted averaging (kriging) of the constituent concentrations at each sampling station. Results of the kriging program were reviewed with observed site conditions and other related data, with selected concentration isopleths being modified to reflect these data. This second technique was employed to provide a comparative basis to the polygon constituent mass estimation method for the 0"-12" upper estuary sediment interval.

In order to estimate the mass of each constituent present within the 0"-12" sediment depth interval, the areas inside adjacent concentration isopleths on Figures 11 through 14 were measured using polar planimetry. The volume of each area was calculated by multiplying the planimeterized area by one foot. The dry weight of the soil in each depth interval was then calculated assuming a dry density of 0.75 g/cm^3. Thus, the volume of soil in each area was multiplied by 0.75 g/cm^3 to calculate the mass of soil in each area.

Since PCBs in sediment are primarily sorbed to sediment particles in the environment, and the concentrations of these constituents are typically reported by the analytical laboratory in units of dry weight (of sediment), the mass of each constituent was estimated as the product of the dry sediment weight and the average constituent concentration between bounding concentration isopleths. In areas where the shoreline or upper estuary wetlands boundary was adjacent to the lowest concentration isopleth, the concentration for this area was estimated by averaging the value of the isopleth with the values of the known concentrations within the area. Calculations of constituent concentrations in these boundary areas were conducted using one-half of the detection limit for locations reported as ND, or if no detection limit was reported, one-half of the CRDL was used, as was done in the kriging process.

In addition, areas bounded by the largest concentration isopleth on pertinent figures were assumed to have a concentration equal to the average of the isopleth and the largest concentration at a sampling station contained within its bounds.

4.0 RESULTS

4.1 POLYGON METHOD

Review of the program output in Appendix B indicates individual mass estimates for each of the four one-foot depth intervals and per polygon as well as a sum the mass of each constituent as estimated in the upper estuary. These data are also summarized in Table 1.

TABLE 1

Estimates of Tons of Constituent Mass
Present in Upper Estuary Sediments
Based on Polygon Method

Constituent	0-12"	12-24"	24-36"	36-48"	0-48"
Aroclor 1016/1242	181	3.3	0.8	0.3	185
Aroclor 1248	27.1	0.7	0.0	0.0	28
Aroclor 1254	77.2	2.8	1.1	0.5	82
Total PCBs	285	15.1	1.9	0.8	303

Note: Differences between Total PCB mass and the sum of Aroclors 1016/1242, 1248, and 1254 masses are due primarily to analytical method variation.

4.2 ISOPLETH METHOD

Table 2 summarizes the mass estimate results for each constituent in the 0"-12" sediment interval using the isopleth method discussed in Section 3.2.

TABLE 2

Estimates of Constituent Mass Present in 0"-12"
Upper Estuary Sediment Interval
Based on Isopleth Method

Constituent	Constituent Mass (tons)
Aroclor 1016/1241	194
Aroclor 1248	31
Aroclor 1254	90
Total PCBs	310

Note: Differences between Total PCB mass and the sum of Aroclors 1016/1242, 1248 and 1254 masses are due primarily to analytical method variation.

4.3 DISCUSSION OF RESULTS

Review of Tables 1 and 2 indicates that the polygon and isopleth methods produced comparable mass estimates for each constituent studied. It should be noted that these mass estimates are approximate and have been based on limited and, in some cases, modified and/or approximated analytical results. Nonetheless, these estimates have been made using the most recent and reliable data currently available as previously discussed, and as such, represent reliable estimates of constituent masses and deposition in New Bedford Harbor upper estuary sediment.

5.0 REFERENCES

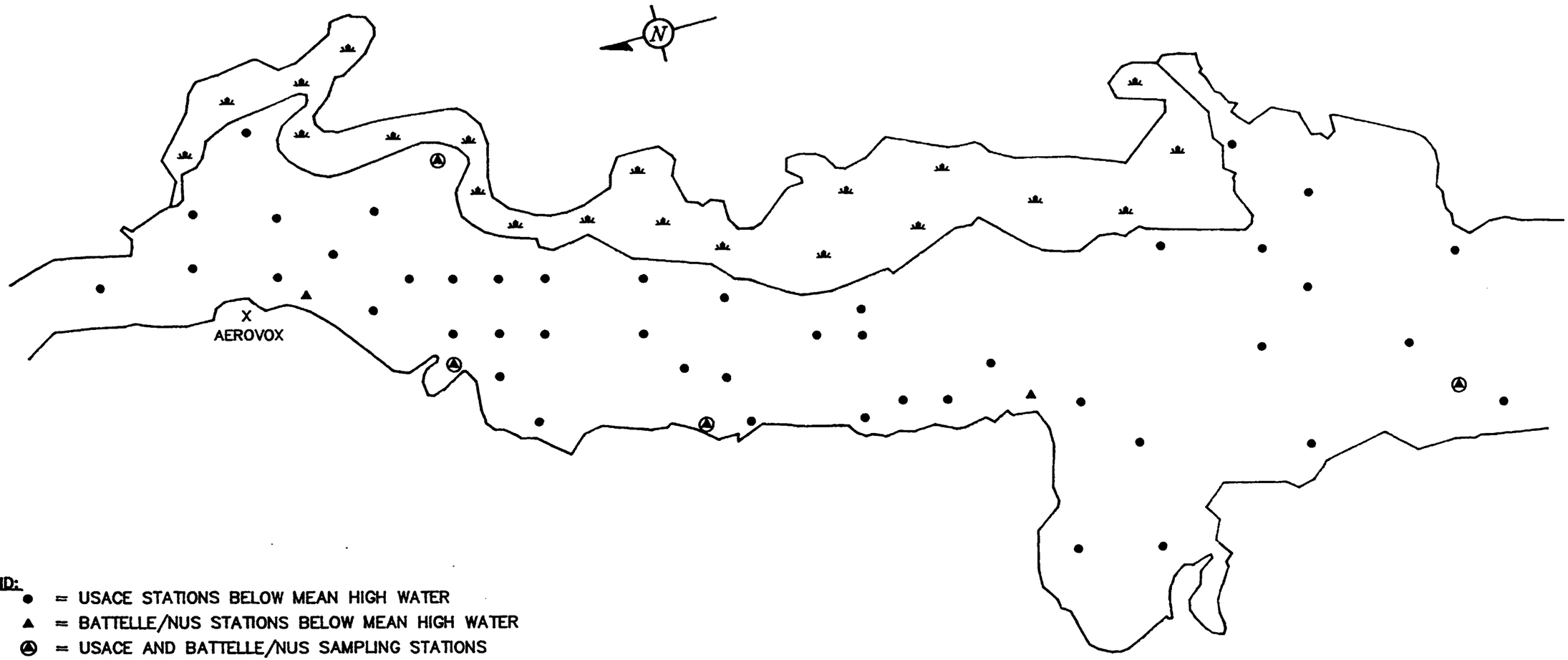
Condike, Brian J., U.S.A.C.E., New England Division; New Bedford Harbor Superfund Site, Acushnet River Estuary Study, June, 1986.

Leavitt, Karen M., A Comparison of Techniques for the Determination of Sedimentation Rates in Great Bay Estuary: M.S. Thesis; University of New Hampshire, 1980.

Peck, Ralph B.; Hanson, Walter E.; and T. H. Thornburn; 1974; Foundation Engineering, Second Edition, John Wiley & Sons, Inc., New York, New York, p. 12.

Truitt, Clifford L.; Dept. of the Army, Waterways Experiment Station, U.S.A.C.E., Vicksburg, Mississippi; The Duwamish Waterway Capping Demonstration Project: Engineering Analysis and Results of Physical Monitoring, March, 1986.

U.S.A.C.E., New England Division: Superfund Site, New Bedford Harbor, Massachusetts, Chemical and Physical Analysis of Sediments From Hot Spot Area, November, 1987.



LEGEND:

- ● = USACE STATIONS BELOW MEAN HIGH WATER
- ▲ = BATTELLE/NUS STATIONS BELOW MEAN HIGH WATER
- ◬ = USACE AND BATTELLE/NUS SAMPLING STATIONS IN SIMILAR LOCATION
- = WETLANDS

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59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH

TITLE: UPPER ESTUARY SAMPLING STATIONS

DATE:	DRAWN:	CHECKED:	PROJECT:	
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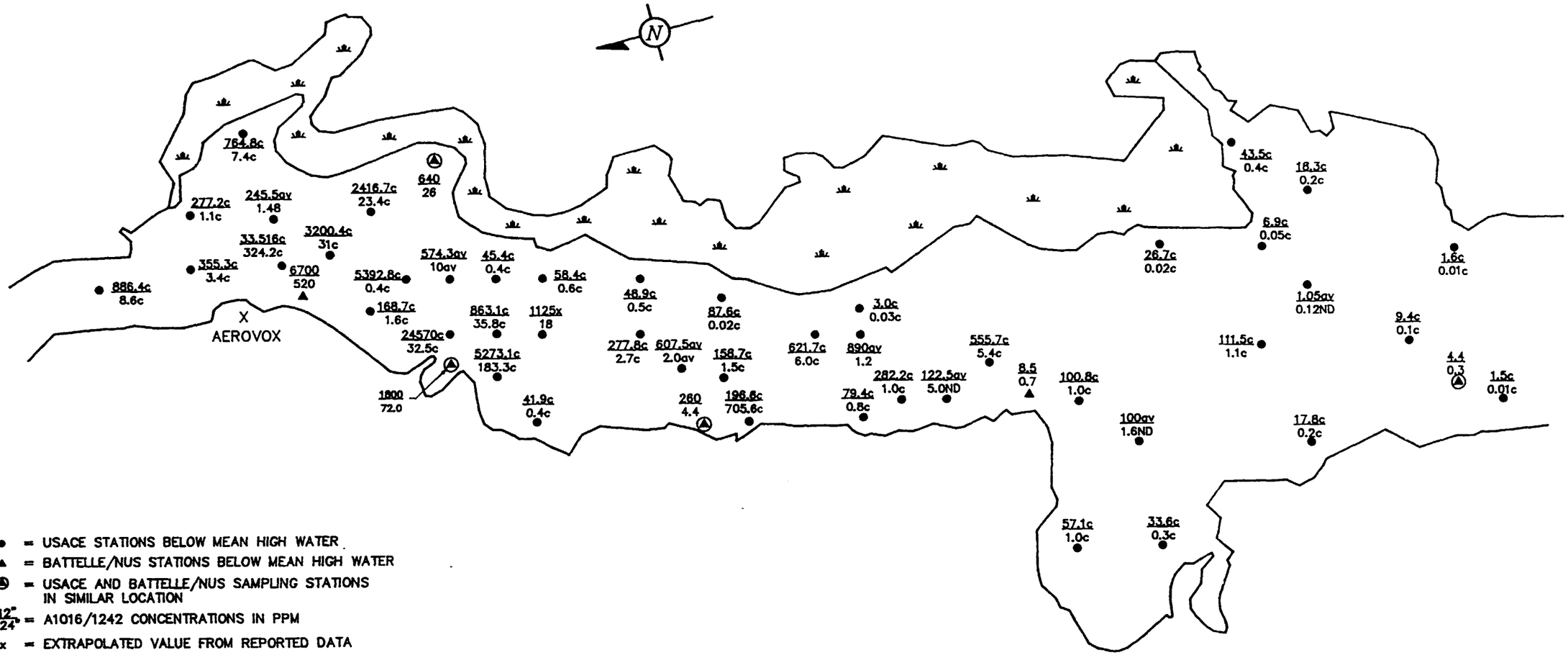

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- ▲ = BATTELLE/NUS STATIONS BELOW MEAN HIGH WATER
- ⍟ = USACE AND BATTELLE/NUS SAMPLING STATIONS IN SIMILAR LOCATION
- 0"–12" / 12"–24" = A1016/1242 CONCENTRATIONS IN PPM
- x = EXTRAPOLATED VALUE FROM REPORTED DATA
- e = ESTIMATED VALUE FROM REPORTED DATA
- a = AVERAGE OF ADJACENT SAMPLING STATIONS
- c = ESTIMATED COMPONENT OF TOTAL PCBS FROM REPORTED DATA
- av = AVERAGE OF REPLICATE SAMPLES
- ND = NONE DETECTED
- ⛰ = WETLANDS

NOTES:

1) UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985) AND BATTELLE/NUS (JUNE, 1985) DATA PRESENTED
2) CONCENTRATIONS SHOWN ARE IN MG/KG DRY WEIGHT OR PPM
3) REPORTED VALUES ARE SHOWN WITHOUT ANY SYMBOL NOTATION
4) VALUES SHOWN AS NONE DETECTED ARE ONE–HALF OF THE DETECTION LIMIT WHERE REPORTED. ONE–HALF OF THE CRDL WAS USED FOR NON–REPORTED DETECTION LIMITS

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CLIENT: NUTTER, MCLENNEN AND FISH

TITLE: A1016/1242 CONCENTRATIONS 0"–12"/12"–24"

DATE:	DRAWN:	CHECKED:	PROJECT:
7/13/89	D.J.P.	E.S.W.	NEW BEDFORD HARBOR

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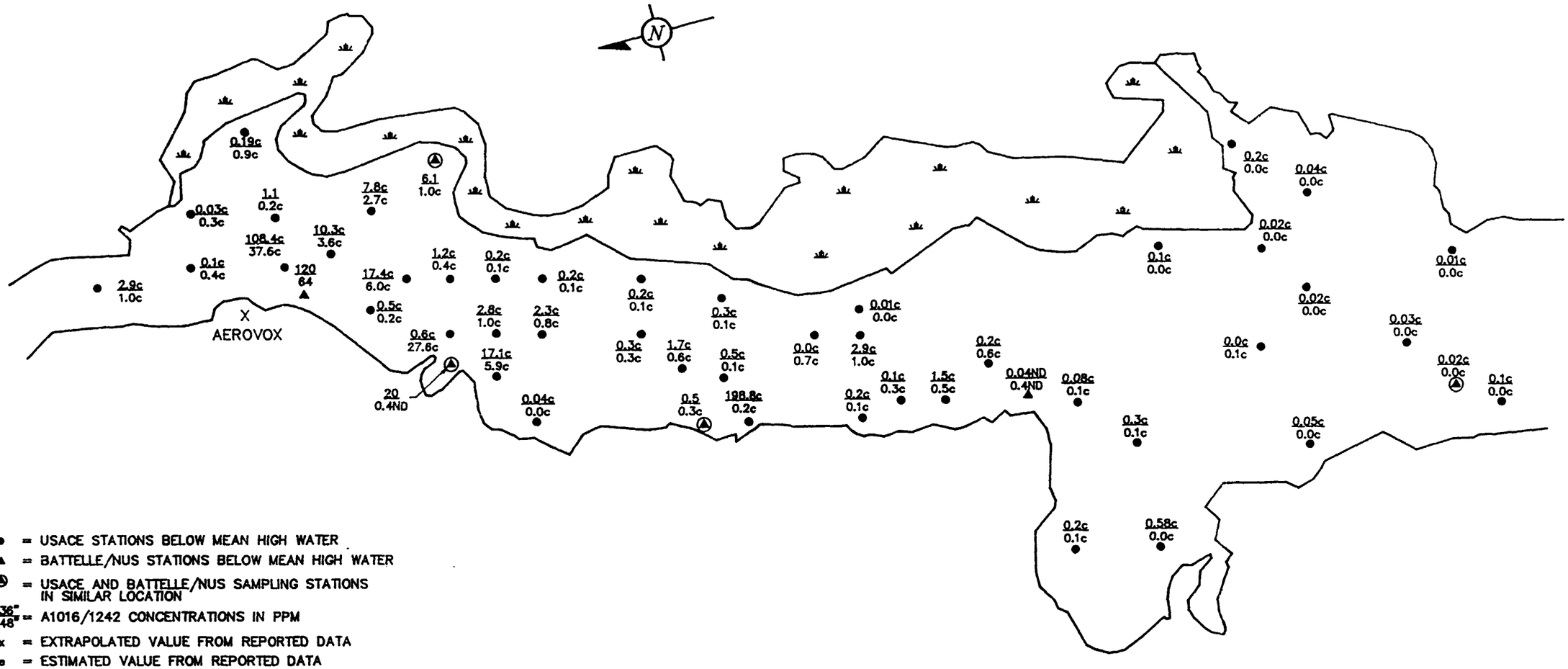

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- e = ESTIMATED VALUE FROM REPORTED DATA
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CLIENT:				
NUTTER, MCLENNEN AND FISH				
TITLE: A1016/1242 CONCENTRATIONS 24"–36"/36"–48"				
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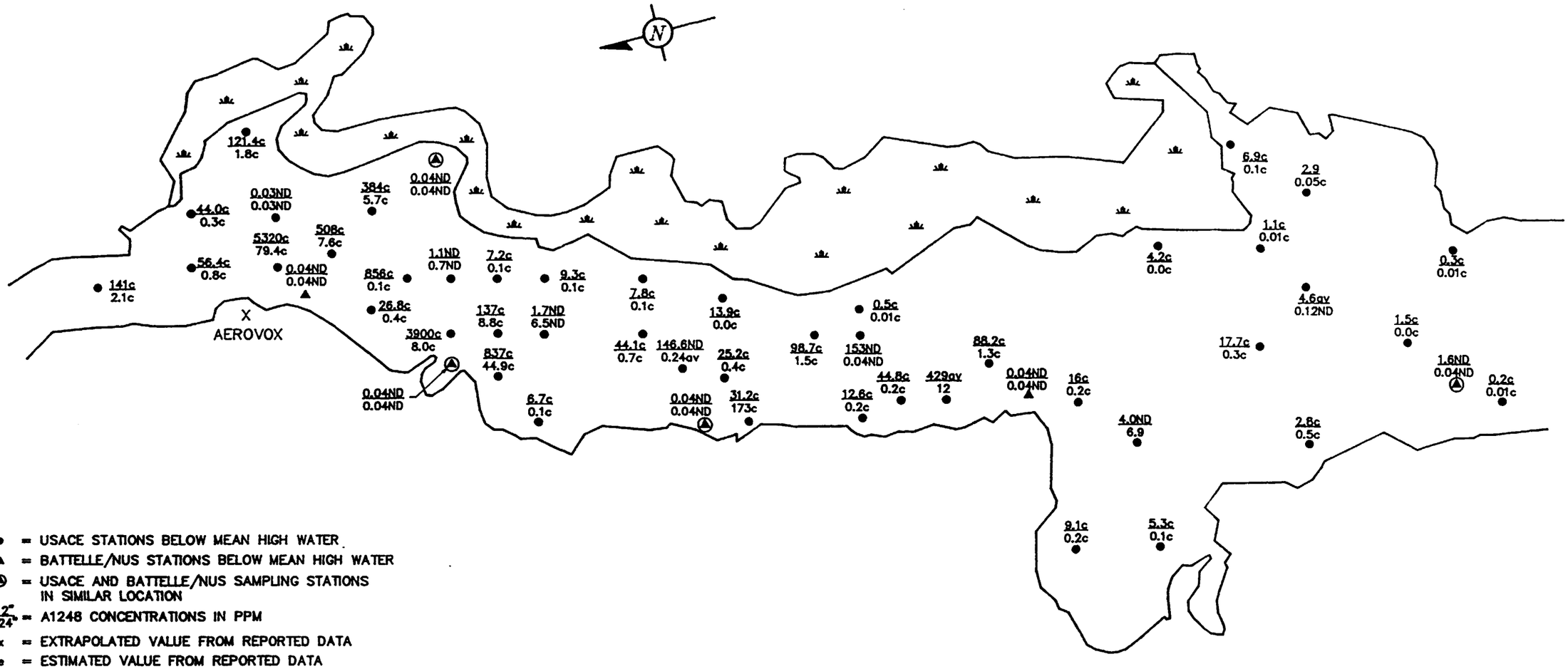

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- $\frac{0"-12"}{12"-24"}$ = A1248 CONCENTRATIONS IN PPM
- x = EXTRAPOLATED VALUE FROM REPORTED DATA
- e = ESTIMATED VALUE FROM REPORTED DATA
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CLIENT: NUTTER, MCLENNEN AND FISH			
TITLE: A1248 CONCENTRATIONS 0"–12"/12"–24"			
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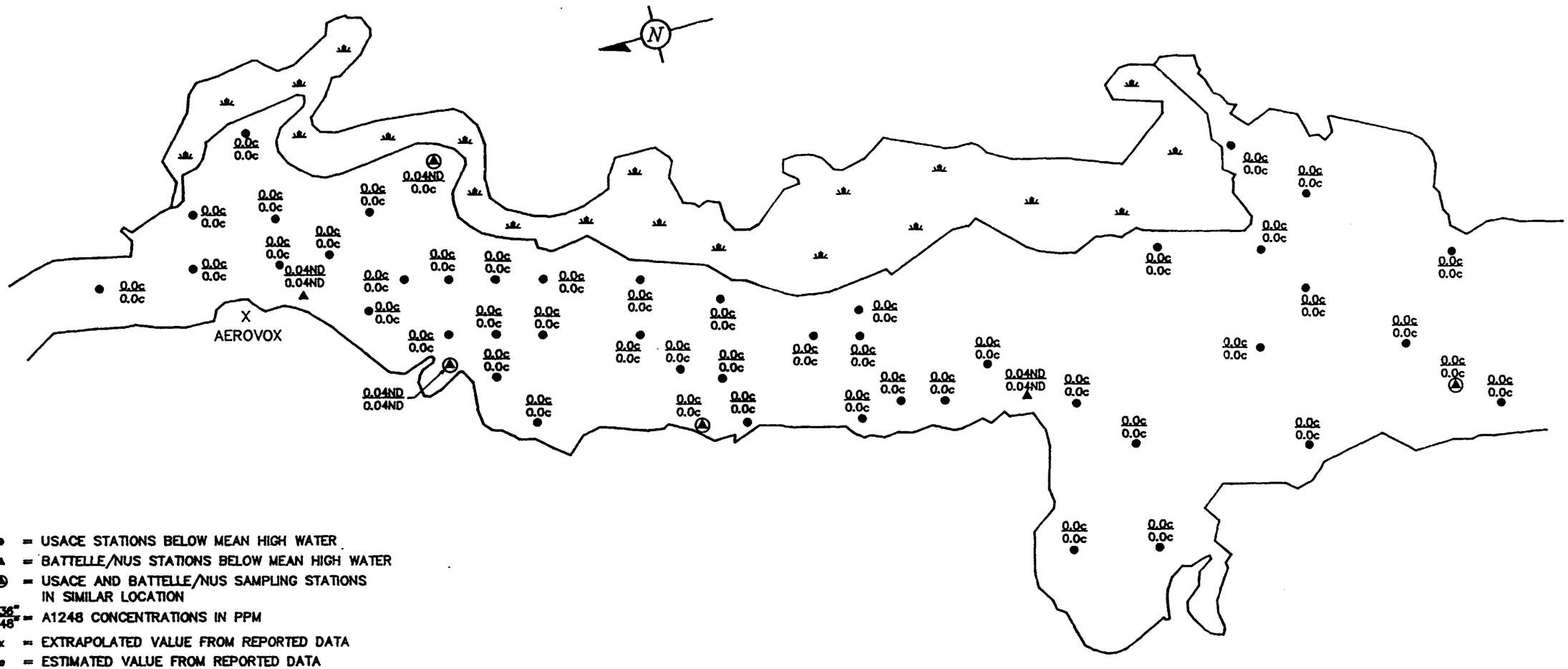

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- = WETLANDS

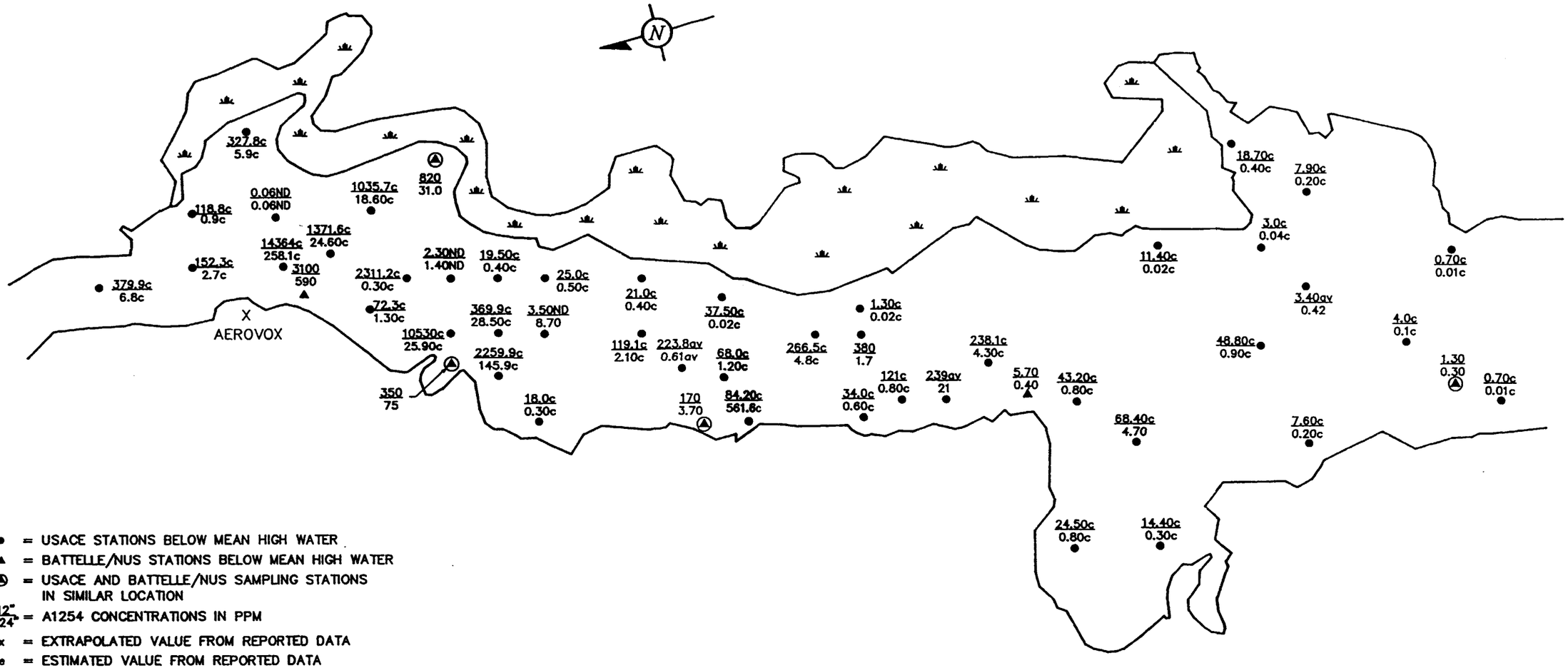
NOTES:

1) UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985) AND BATTELLE/NUS (JUNE, 1985) DATA PRESENTED
2) CONCENTRATIONS SHOWN ARE IN MG/KG DRY WEIGHT OR PPM
3) REPORTED VALUES ARE SHOWN WITHOUT ANY SYMBOL NOTATION
4) VALUES SHOWN AS NONE DETECTED ARE ONE–HALF OF THE DETECTION LIMIT WHERE REPORTED. ONE–HALF OF THE CRDL WAS USED FOR NON–REPORTED DETECTION LIMITS

DRAFT

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH			
TITLE: A1248 CONCENTRATIONS 24"–36"/36"–48"			
DATE: 7/13/89	DRAWN: D.J.P.	CHECKED: E.S.W.	PROJECT: NEW BEDFORD HARBOR
APPROXIMATE SCALE: 1"=540'	FILE NO: 6002ue13	APPROVED: L.C.S.	FIGURE NO: FIG. 5 / PROJECT NO: 6292.03



LEGEND:

- ● = USACE STATIONS BELOW MEAN HIGH WATER
- ▲ = BATTELLE/NUS STATIONS BELOW MEAN HIGH WATER
- Ⓐ = USACE AND BATTELLE/NUS SAMPLING STATIONS IN SIMILAR LOCATION
- $\frac{0"-12"}{12"-24"}$ = A1254 CONCENTRATIONS IN PPM
- x = EXTRAPOLATED VALUE FROM REPORTED DATA
- e = ESTIMATED VALUE FROM REPORTED DATA
- a = AVERAGE OF ADJACENT SAMPLING STATIONS
- c = ESTIMATED COMFORT OF TOTAL PCBS FROM REPORTED DATA
- av = AVERAGE OF REPLICATE SAMPLES
- ND = NONE DETECTED
- = WETLANDS

NOTES:

1) UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985) AND BATTELLE/NUS (JUNE, 1985) DATA PRESENTED
2) CONCENTRATIONS SHOWN ARE IN MG/KG DRY WEIGHT OR PPM
3) REPORTED VALUES ARE SHOWN WITHOUT ANY SYMBOL NOTATION
4) VALUES SHOWN AS NONE DETECTED ARE ONE–HALF OF THE DETECTION LIMIT WHERE REPORTED. ONE–HALF OF THE CRDL WAS USED FOR NON–REPORTED DETECTION LIMITS

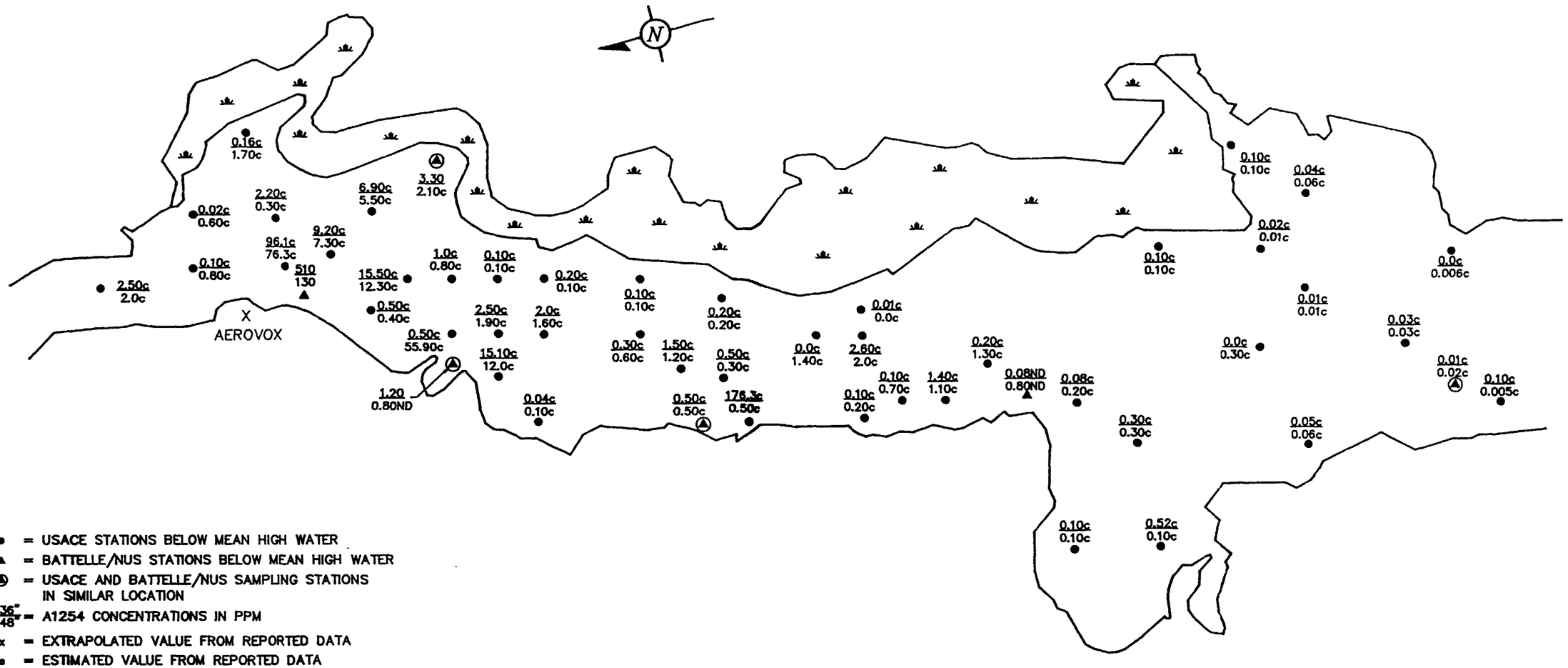
DRAFT

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH

TITLE: A1254 CONCENTRATIONS 0"–12"/12"–24"

DATE:	DRAWN:	CHECKED:	PROJECT:	
7/13/89	D.J.P.	E.S.W.	NEW BEDFORD HARBOR	
APPROXIMATE SCALE: 1"=540'	FILE NO: 6002ue14	APPROVED: L.C.S.	FIGURE NO: FIG. 6	PROJECT NO: 6292.03



LEGEND:

- ● = USACE STATIONS BELOW MEAN HIGH WATER
- ▲ = BATTELLE/NUS STATIONS BELOW MEAN HIGH WATER
- Ⓐ = USACE AND BATTELLE/NUS SAMPLING STATIONS IN SIMILAR LOCATION
- $\frac{24"-36"}{36"-48"}$ = A1254 CONCENTRATIONS IN PPM
- x = EXTRAPOLATED VALUE FROM REPORTED DATA
- e = ESTIMATED VALUE FROM REPORTED DATA
- a = AVERAGE OF ADJACENT SAMPLING STATIONS
- c = ESTIMATED COMPONENT OF TOTAL PCBS FROM REPORTED DATA
- av = AVERAGE OF REPLICATE SAMPLES
- ND = NONE DETECTED
- = WETLANDS

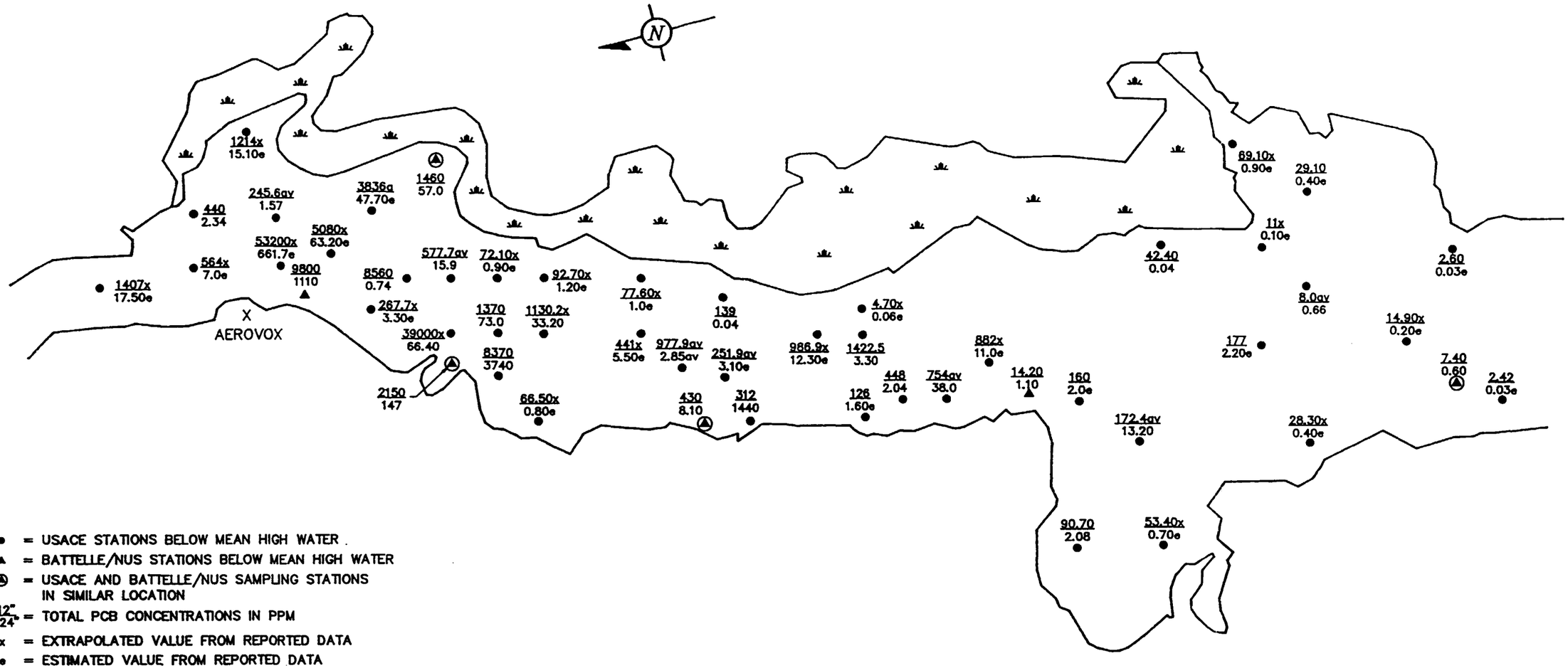
NOTES:

1) UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST--OCTOBER, 1985) AND BATTELLE/NUS (JUNE, 1985) DATA PRESENTED
2) CONCENTRATIONS SHOWN ARE IN MG/KG DRY WEIGHT OR PPM
3) REPORTED VALUES ARE SHOWN WITHOUT ANY SYMBOL NOTATION
4) VALUES SHOWN AS NONE DETECTED ARE ONE-HALF OF THE DETECTION LIMIT WHERE REPORTED. ONE-HALF OF THE CRDL WAS USED FOR NON-REPORTED DETECTION LIMITS

DRAFT

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH			
TITLE: A1254 CONCENTRATIONS 24"-36"/36"-48"			
DATE: 7/13/89	DRAWN: D.J.P.	CHECKED: E.S.W.	PROJECT: NEW BEDFORD HARBOR
APPROXIMATE SCALE: 1"=540'	FILE NO: 6002ue15	APPROVED: L.C.S.	FIGURE NO: FIG. 7 / PROJECT NO: 6292.03



LEGEND:

- ● = USACE STATIONS BELOW MEAN HIGH WATER
- ▲ = BATTELLE/NUS STATIONS BELOW MEAN HIGH WATER
- Ⓐ = USACE AND BATTELLE/NUS SAMPLING STATIONS IN SIMILAR LOCATION
- 0"–12" / 12"–24" = TOTAL PCB CONCENTRATIONS IN PPM
- x = EXTRAPOLATED VALUE FROM REPORTED DATA
- e = ESTIMATED VALUE FROM REPORTED DATA
- a = AVERAGE OF ADJACENT SAMPLING STATIONS
- av = AVERAGE OF REPLICATE SAMPLES
- ND = NONE DETECTED
- = WETLANDS

NOTES:

1) UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985) AND BATTELLE/NUS (JUNE, 1985) DATA PRESENTED
2) CONCENTRATIONS SHOWN ARE IN MG/KG DRY WEIGHT OR PPM
3) REPORTED VALUES ARE SHOWN WITHOUT ANY SYMBOL NOTATION
4) VALUES SHOWN AS NONE DETECTED ARE ONE–HALF OF THE DETECTION LIMIT WHERE REPORTED. ONE–HALF OF THE CRDL WAS USED FOR NON–REPORTED DETECTION LIMITS

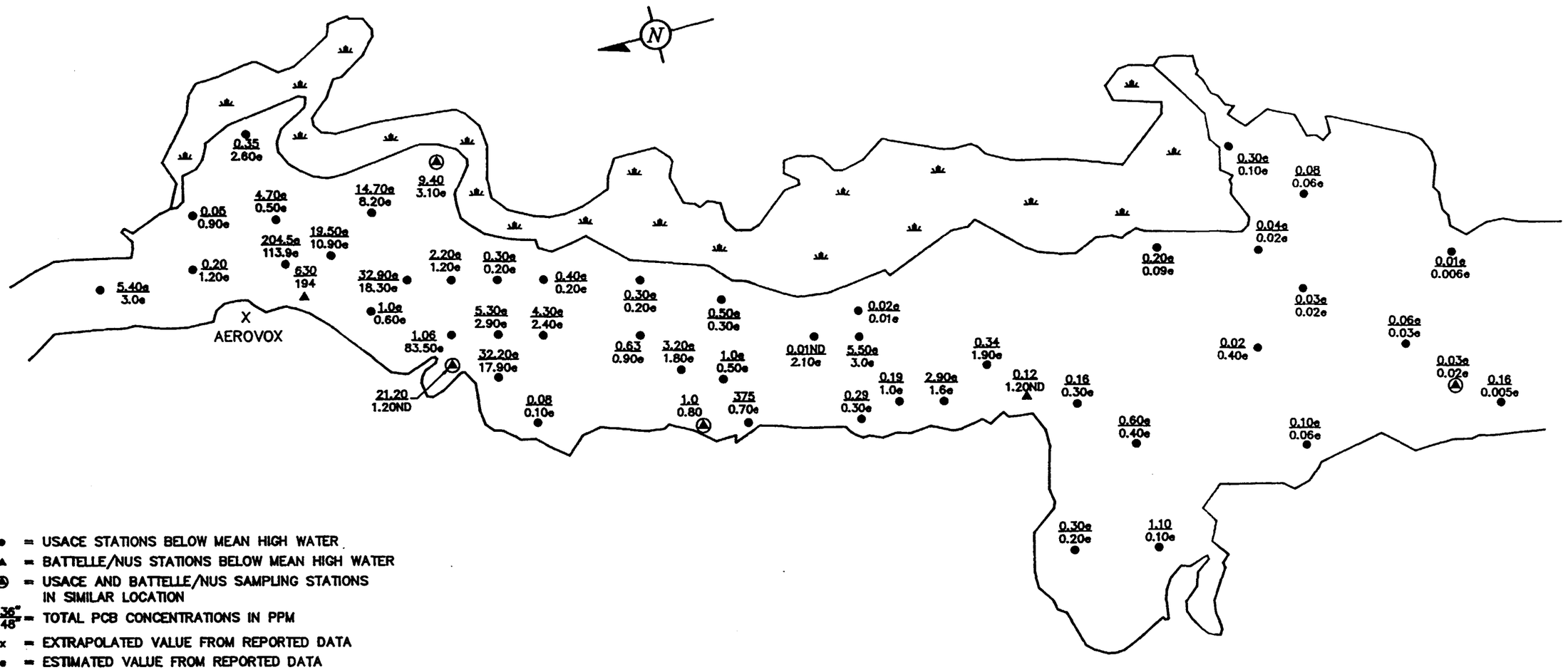
DRAFT

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH

TITLE: TOTAL PCB CONCENTRATIONS 0"–12"/12"–24"

DATE:	DRAWN:	CHECKED:	PROJECT:	
7/13/89	D.J.P.	E.S.W.	NEW BEDFORD HARBOR	
APPROXIMATE SCALE: 1"=540'	FILE NO: 6002ue16	APPROVED: L.C.S.	FIGURE NO: FIG. 8	PROJECT NO: 6292.03



LEGEND:

- ● = USACE STATIONS BELOW MEAN HIGH WATER
- ▲ = BATTELLE/NUS STATIONS BELOW MEAN HIGH WATER
- ⓐ = USACE AND BATTELLE/NUS SAMPLING STATIONS IN SIMILAR LOCATION
- $\frac{24"-36"}{36"-48"}$ = TOTAL PCB CONCENTRATIONS IN PPM
- x = EXTRAPOLATED VALUE FROM REPORTED DATA
- e = ESTIMATED VALUE FROM REPORTED DATA
- a = AVERAGE OF ADJACENT SAMPLING STATIONS
- av = AVERAGE OF REPLICATE SAMPLES
- ND = NONE DETECTED
- = WETLANDS

NOTES:

1) UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985) AND BATTELLE/NUS (JUNE, 1985) DATA PRESENTED
2) CONCENTRATIONS SHOWN ARE IN MG/KG DRY WEIGHT OR PPM
3) REPORTED VALUES ARE SHOWN WITHOUT ANY SYMBOL NOTATION
4) VALUES SHOWN AS NONE DETECTED ARE ONE–HALF OF THE DETECTION LIMIT WHERE REPORTED. ONE–HALF OF THE CRDL WAS USED FOR NON–REPORTED DETECTION LIMITS

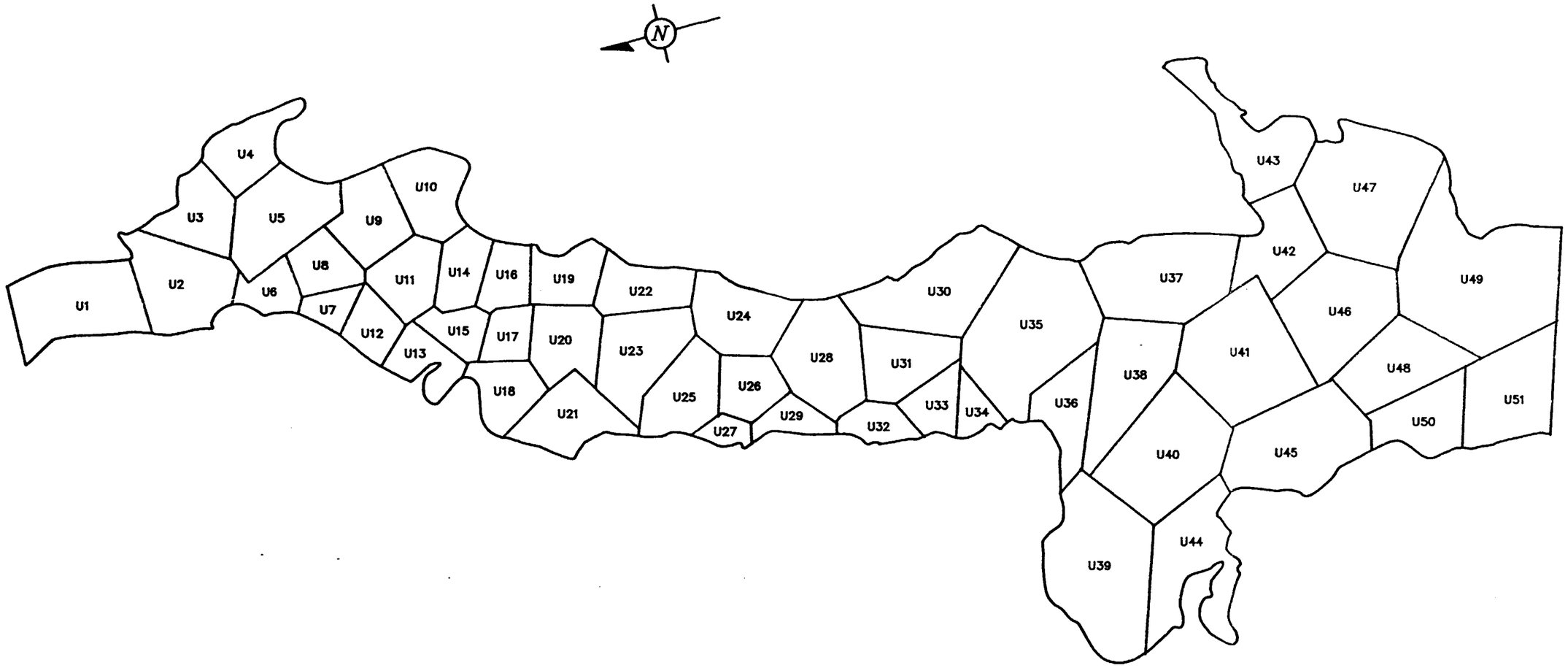
DRAFT

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH

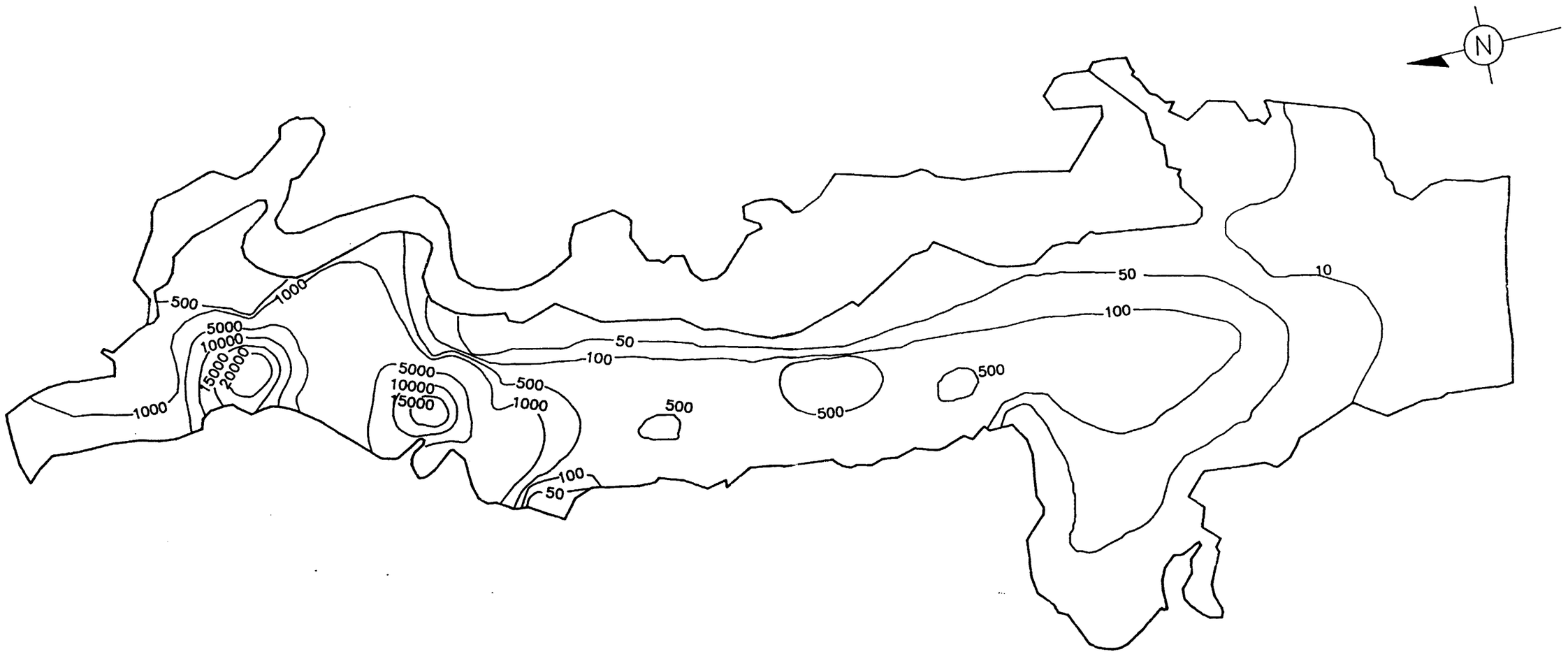
TITLE: TOTAL PCB CONCENTRATIONS 24"–36"/36"–48"

DATE:	DRAWN:	CHECKED:	PROJECT:	
7/13/89	D.J.P.	E.S.W.	NEW BEDFORD HARBOR	
APPROXIMATE SCALE:	FILE NO:	APPROVED:	FIGURE NO:	PROJECT NO:
1"=540'	6002ue17	L.C.S.	FIG. 9	6292.03



BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH				
TITLE: SUBSECTIONS OF UPPER ESTUARY				
DATE: 7/13/89	DRAWN: D.J.P.	CHECKED: E.S.W.	PROJECT: NEW BEDFORD HARBOR	
APPROXIMATE SCALE: 1"=540'	FILE NO: 6002ue18	APPROVED: L.C.S.	FIGURE NO: FIG. 10	PROJECT NO: 6292.03



LEGEND

500 = A1016/1242 CONCENTRATION ISOPLETH (PPM)

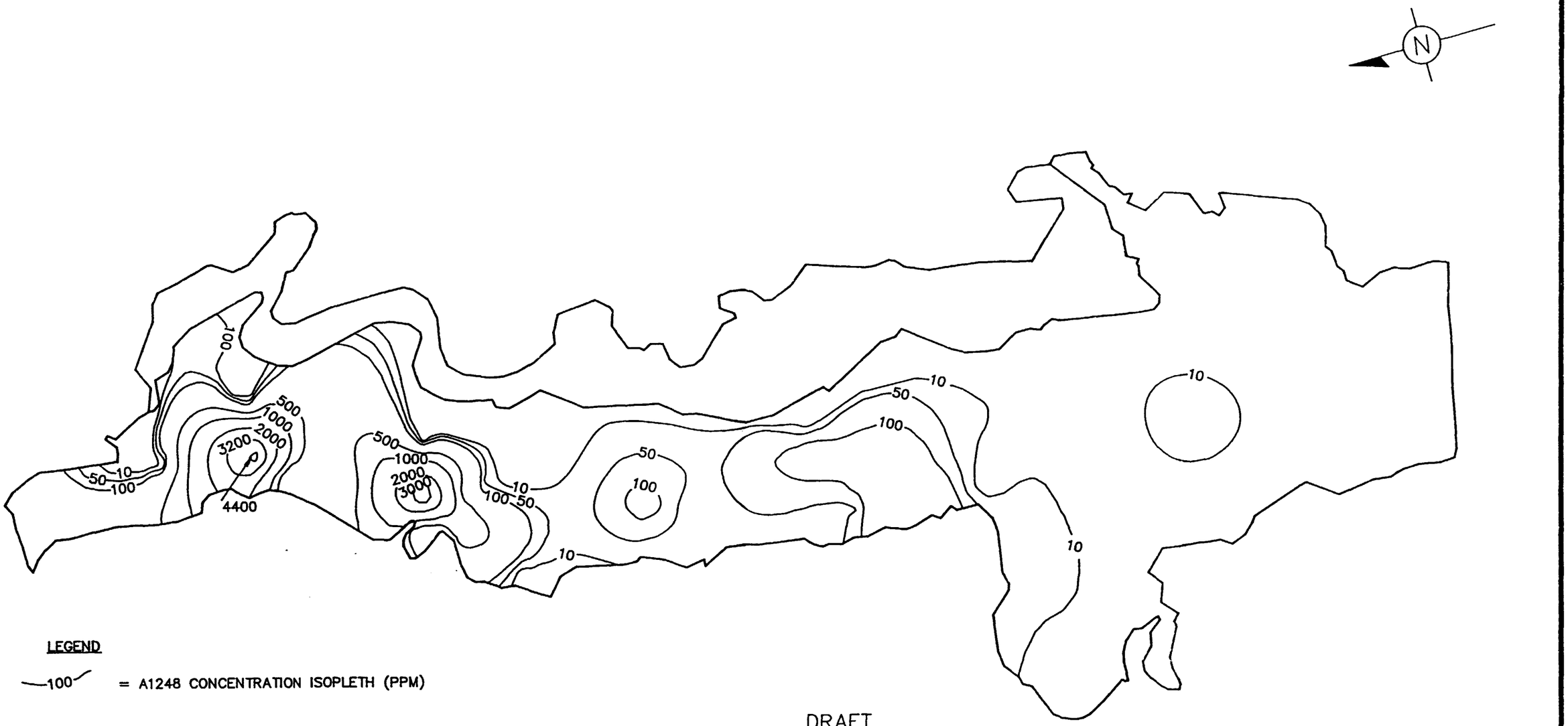
DRAFT

NOTES:

1. ISOPLETHS DEVELOPED USING KRIGING & DATA FROM UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985 AND AUGUST, 1987) AND BATTELLE/NUS (JUNE, 1985)

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH				
TITLE: ISOPLETHS FOR A1016/1242 CONCENTRATIONS 0–12" INTERVAL				
DATE: 7/13/89	DRAWN: D.J.H.	CHECKED: E.S.W.	PROJECT: NEW BEDFORD HARBOR	
APPROX. SCALE: 1"=540'	FILE NO: 62923	APPROVED: L.C.S.	FIGURE NO: FIG. 11	PROJECT NO: 6292.03



LEGEND

100 = A1248 CONCENTRATION ISOPLETH (PPM)

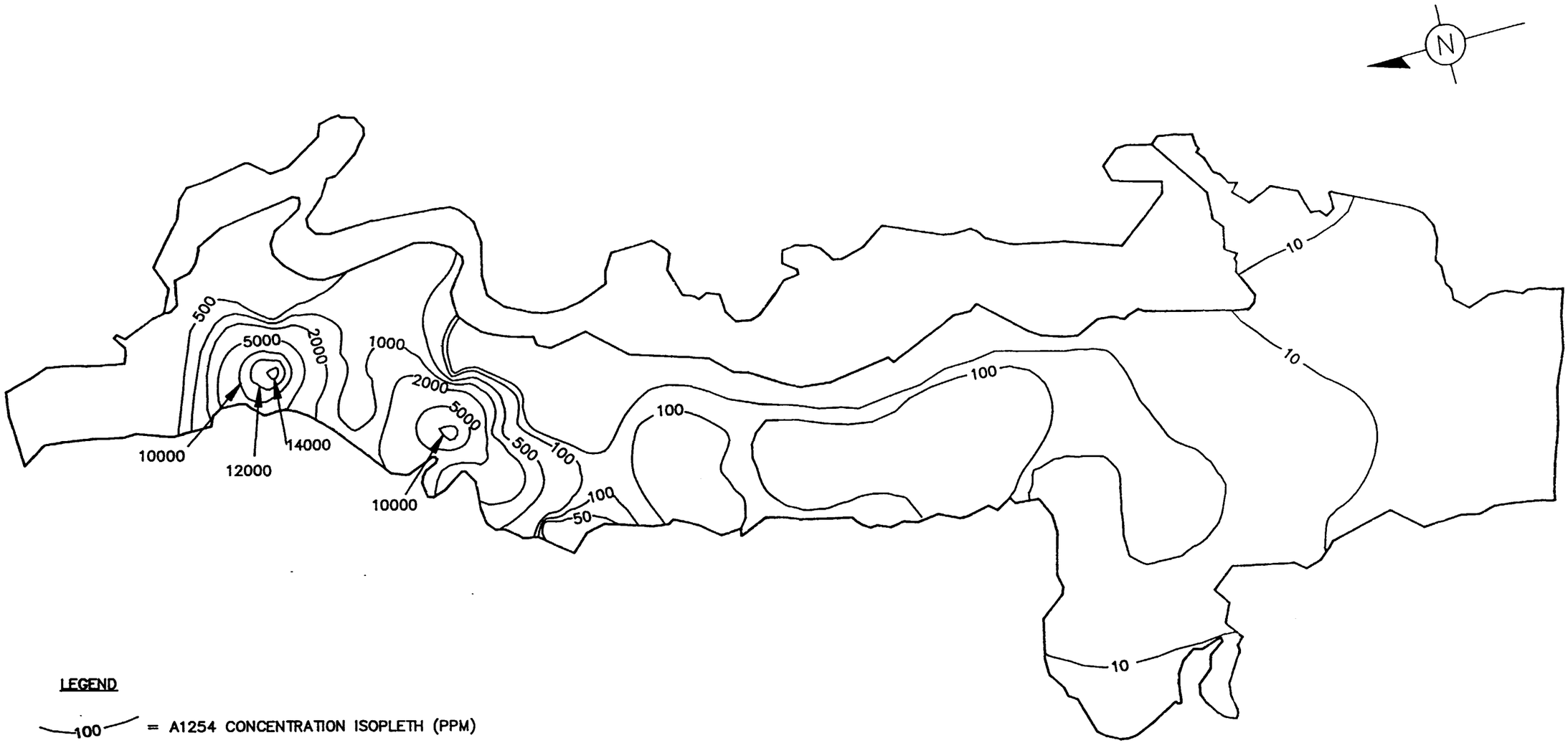
DRAFT

NOTES:

1. ISOPLETHS DEVELOPED USING KRIGING & DATA FROM UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985 AND AUGUST, 1987) AND BATTLELLE/NUS (JUNE, 1985)

BALSAM ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH			
TITLE: ISOPLETHS FOR A1248 CONCENTRATIONS 0–12" INTERVAL			
DATE: 7/13/89	DRAWN: D.J.H.	CHECKED: E.S.W.	PROJECT: NEW BEDFORD HARBOR
APPROX. SCALE: 1"=540'	FILE NO: 62924	APPROVED: L.C.S.	FIGURE NO: FIG. 12 / PROJECT NO: 6292.03



LEGEND

100 = A1254 CONCENTRATION ISOPLETH (PPM)

DRAFT

NOTES

1. ISOPLETHS DEVELOPED USING KRIGING & DATA FROM UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985 AND AUGUST, 1987) AND BATTELLE/NUS (JUNE, 1985)

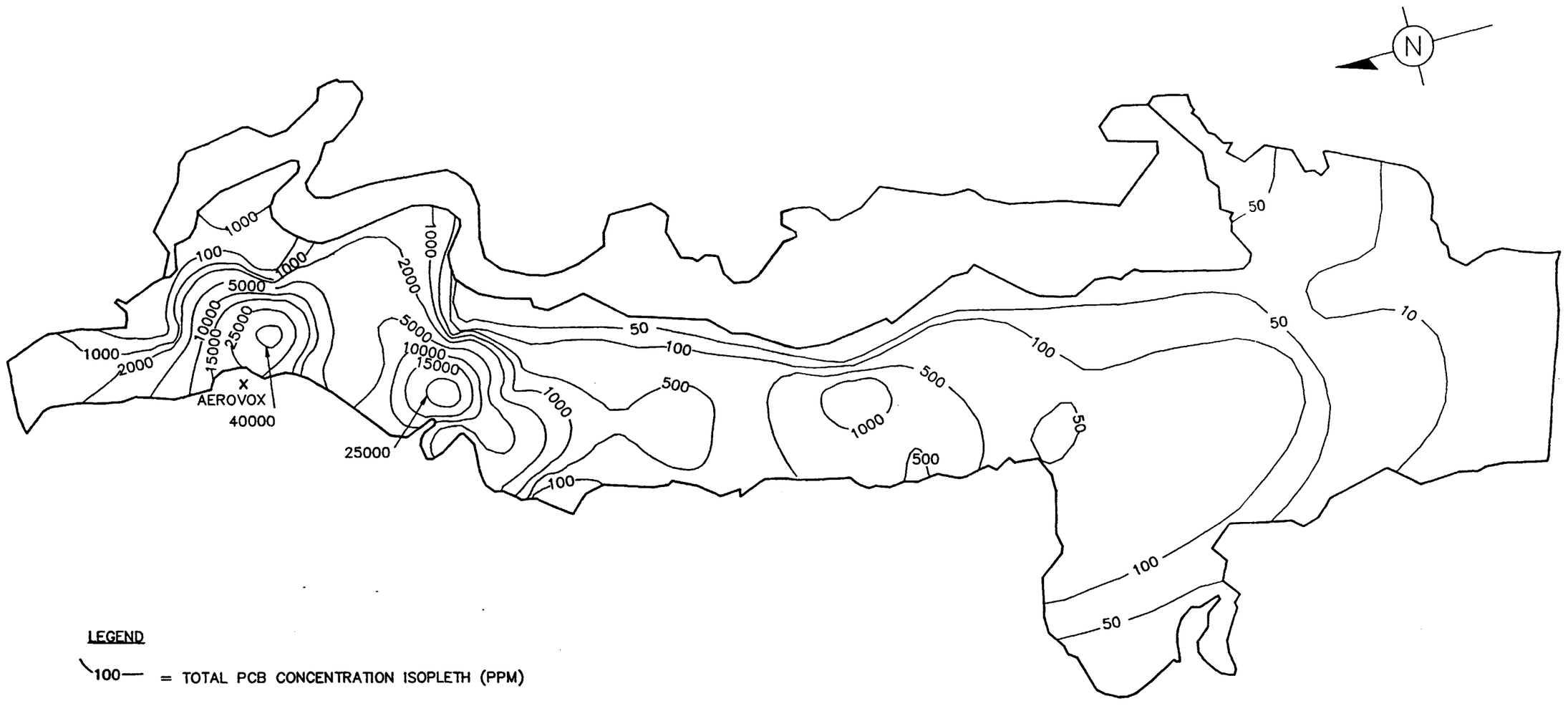
BALSAM ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH

TITLE: ISOPLETHS FOR A1254 CONCENTRATIONS 0–12" INTERVAL

DATE:	DRAWN:	CHECKED:	PROJECT:
7/13/89	D.J.H.	E.S.W.	NEW BEDFORD HARBOR

APPROX. SCALE:	FILE NO:	APPROVED:	FIGURE NO:	PROJECT NO:
1"=540'	62921	L.C.S.	FIG. 13	6292.03



LEGEND

100— = TOTAL PCB CONCENTRATION ISOPLETH (PPM)

NOTES:

1. ISOPLETHS DEVELOPED USING KRIGING & DATA FROM UNITED STATES ARMY CORPS OF ENGINEERS (AUGUST–OCTOBER, 1985 AND AUGUST 1987) AND BATTELLE/NUS (JUNE, 1985)

DRAFT

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
59 STILES RD. SALEM, N.H. 03079

CLIENT: NUTTER, MCLENNEN AND FISH

TITLE: ISOPLETHS FOR TOTAL PCB CONCENTRATIONS 0"–12" INTERVAL

DATE:	DRAWN:	CHECKED:	PROJECT:	
7/24/89	D.J.H.	E.S.W.	NEW BEDFORD HARBOR	
APPROX. SCALE:	FILE NO:	APPROVED:	FIGURE NO:	PROJECT NO:
1"=540'	62922	L.C.S.	FIG. 14	6292.03

APPENDIX A
ASSUMPTIONS

APPENDIX A
ASSUMPTIONS

1. Data from the USACE and Battelle/NUS sampling programs are assumed to be representative of current conditions in the New Bedford Harbor upper estuary.

2. Constituent concentrations are assumed to be one-half of the detection limit where "ND" (not detected) was reported, or one-half of the CRDL at locations where ND was reported and the detection limit was not.

3. The harbor sediment is assumed to have an average dry density of 0.75 grams per cubic centimeter (g/cm^3).

4. The concentration value in one depth interval at one sampling station is assumed to be representative of the average concentration of the entire depth interval in the polygon in which it is located.

5. The Thiessen polygon approach is assumed to be an appropriate technique to delineate relative sub-areas in a larger sampling station matrix.

6. Concentrations reported as mg/kg (dry weight) are assumed to be equivalent to parts per million (ppm).

7. The areas between bounding isopleths are assumed to contain a constant concentration of constituent which is equal to the average of the isopleths. The concentration in areas which are bounded by the shoreline or the upper estuary wetlands boundary is assumed to be equal to the average of the concentrations of the isopleth, and the data points within the area. Areas bounded by the largest concentration isopleth on each figure are assumed to have a constant concentration equal to the average of the isopleth and the largest concentration at a sampling station contained within its bounds.

8. Kriging is an appropriate technique to delineate concentration isopleths in this study and, therefore, areas of equal concentration.

APPENDIX B

****

DATA SUMMARY FOR UPPER ESTUARY

****

PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 1	0-12	242203.	5665.	886.	5.	comp.
U- 1	12-24	242203.	5665.	9.	0.	comp.
U- 1	24-36	242203.	5665.	3.	0.	comp.
U- 1	36-48	242203.	5665.	1.	0.	comp.
TOTALS			22660.		5.	
U- 2	0-12	202776.	4743.	355.	2.	comp.
U- 2	12-24	202776.	4743.	3.	0.	comp.
U- 2	24-36	202776.	4743.	0.	0.	comp.
U- 2	36-48	202776.	4743.	0.	0.	comp.
TOTALS			18971.		2.	
U- 3	0-12	119070.	2785.	277.	1.	comp.
U- 3	12-24	119070.	2785.	1.	0.	comp.
U- 3	24-36	119070.	2785.	0.	0.	comp.
U- 3	36-48	119070.	2785.	0.	0.	comp.
TOTALS			11140.		1.	
U- 4	0-12	134657.	3150.	765.	2.	comp.
U- 4	12-24	134657.	3150.	7.	0.	comp.
U- 4	24-36	134657.	3150.	0.	0.	comp.
U- 4	36-48	134657.	3150.	1.	0.	comp.
TOTALS			12598.		2.	

****

DATA SUMMARY FOR UPPER ESTUARY

****

PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 5	0-12	194326.	4545.	245.	1.	ave.
U- 5	12-24	194326.	4545.	1.	0.	
U- 5	24-36	194326.	4545.	1.	0.	
U- 5	36-48	194326.	4545.	0.	0.	comp.
TOTALS			18181.		1.	
U- 6	0-12	57512.	1345.	33516.	45.	comp.
U- 6	12-24	57512.	1345.	324.	0.	comp.
U- 6	24-36	57512.	1345.	108.	0.	comp.
U- 6	36-48	57512.	1345.	38.	0.	comp.
TOTALS			5381.		46.	
U- 7	0-12	38541.	901.	6700.	6.	
U- 7	12-24	38541.	901.	520.	0.	
U- 7	24-36	38541.	901.	120.	0.	
U- 7	36-48	38541.	901.	64.	0.	
TOTALS			3606.		7.	
U- 8	0-12	82413.	1928.	3200.	6.	comp.
U- 8	12-24	82413.	1928.	31.	0.	comp.
U- 8	24-36	82413.	1928.	10.	0.	comp.
U- 8	36-48	82413.	1928.	4.	0.	comp.
TOTALS			7710.		6.	

****

DATA SUMMARY FOR UPPER ESTUARY

****

PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 9	0-12	132676.	3103.	2417.	7.	comp.
U- 9	12-24	132676.	3103.	23.	0.	comp.
U- 9	24-36	132676.	3103.	8.	0.	comp.
U- 9	36-48	132676.	3103.	3.	0.	comp.
TOTALS			12413.		8.	
U-10	0-12	131656.	3079.	640.	2.	
U-10	12-24	131656.	3079.	26.	0.	
U-10	24-36	131656.	3079.	6.	0.	
U-10	36-48	131656.	3079.	1.	0.	comp.
TOTALS			12317.		2.	
U-11	0-12	111775.	2614.	5393.	14.	comp.
U-11	12-24	111775.	2614.	0.	0.	comp.
U-11	24-36	111775.	2614.	17.	0.	comp.
U-11	36-48	111775.	2614.	6.	0.	comp.
TOTALS			10457.		14.	
U-12	0-12	72258.	1690.	169.	0.	comp.
U-12	12-24	72258.	1690.	2.	0.	comp.
U-12	24-36	72258.	1690.	0.	0.	comp.
U-12	36-48	72258.	1690.	0.	0.	comp.
TOTALS			6760.		0.	

****

DATA SUMMARY FOR UPPER ESTUARY

****

PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-13	0-12	43222.	1011.	1800.	2.	
U-13	12-24	43222.	1011.	72.	0.	
U-13	24-36	43222.	1011.	20.	0.	
U-13	36-48	43222.	1011.	0.	0.	ND
TOTALS			4044.		2.	
U-14	0-12	87195.	2039.	574.	1.	ave.
U-14	12-24	87195.	2039.	10.	0.	ave.
U-14	24-36	87195.	2039.	1.	0.	comp.
U-14	36-48	87195.	2039.	0.	0.	comp.
TOTALS			8158.		1.	
U-15	0-12	85856.	2008.	24570.	49.	comp.
U-15	12-24	85856.	2008.	32.	0.	comp.
U-15	24-36	85856.	2008.	1.	0.	comp.
U-15	36-48	85856.	2008.	28.	0.	comp.
TOTALS			8033.		49.	
U-16	0-12	78459.	1835.	45.	0.	comp.
U-16	12-24	78459.	1835.	0.	0.	comp.
U-16	24-36	78459.	1835.	0.	0.	comp.
U-16	36-48	78459.	1835.	0.	0.	comp.
TOTALS			7340.		0.	

****

DATA SUMMARY FOR UPPER ESTUARY

****

PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-17	0-12	54272.	1269.	863.	1.	comp.
U-17	12-24	54272.	1269.	36.	0.	comp.
U-17	24-36	54272.	1269.	3.	0.	comp.
U-17	36-48	54272.	1269.	1.	0.	comp.
TOTALS			5078.		1.	
U-18	0-12	105457.	2467.	5273.	13.	comp.
U-18	12-24	105457.	2467.	183.	0.	comp.
U-18	24-36	105457.	2467.	17.	0.	comp.
U-18	36-48	105457.	2467.	6.	0.	comp.
TOTALS			9866.		14.	
U-19	0-12	110478.	2584.	58.	0.	comp.
U-19	12-24	110478.	2584.	1.	0.	comp.
U-19	24-36	110478.	2584.	0.	0.	comp.
U-19	36-48	110478.	2584.	0.	0.	comp.
TOTALS			10336.		0.	
U-20	0-12	113701.	2659.	1125.	3.	ext.
U-20	12-24	113701.	2659.	18.	0.	
U-20	24-36	113701.	2659.	2.	0.	comp.
U-20	36-48	113701.	2659.	1.	0.	comp.
TOTALS			10638.		3.	

****

DATA SUMMARY FOR UPPER ESTUARY

****

PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-21	0-12	159563.	3732.	42.	0.	comp.
U-21	12-24	159563.	3732.	0.	0.	comp.
U-21	24-36	159563.	3732.	0.	0.	comp.
U-21	36-48	159563.	3732.	0.	0.	comp.
TOTALS			14928.		0.	
U-22	0-12	118428.	2770.	49.	0.	comp.
U-22	12-24	118428.	2770.	0.	0.	comp.
U-22	24-36	118428.	2770.	0.	0.	comp.
U-22	36-48	118428.	2770.	0.	0.	comp.
TOTALS			11080.		0.	
U-23	0-12	174275.	4076.	278.	1.	comp.
U-23	12-24	174275.	4076.	3.	0.	comp.
U-23	24-36	174275.	4076.	0.	0.	comp.
U-23	36-48	174275.	4076.	0.	0.	comp.
TOTALS			16305.		1.	
U-24	0-12	178573.	4177.	88.	0.	comp.
U-24	12-24	178573.	4177.	0.	0.	comp.
U-24	24-36	178573.	4177.	0.	0.	comp.
U-24	36-48	178573.	4177.	0.	0.	comp.
TOTALS			16707.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-25	0-12	135037.	3158.	607.	2.	ave.
U-25	12-24	135037.	3158.	2.	0.	ave.
U-25	24-36	135037.	3158.	2.	0.	comp
U-25	36-48	135037.	3158.	1.	0.	comp.
TOTALS			12634.		2.	
U-26	0-12	91695.	2145.	159.	0.	comp.
U-26	12-24	91695.	2145.	1.	0.	comp.
U-26	24-36	91695.	2145.	0.	0.	comp.
U-26	36-48	91695.	2145.	0.	0.	comp.
TOTALS			8579.		0.	
U-27	0-12	41442.	969.	260.	0.	
U-27	12-24	41442.	969.	4.	0.	
U-27	24-36	41442.	969.	0.	0.	
U-27	36-48	41442.	969.	0.	0.	comp.
TOTALS			3877.		0.	
U-28	0-12	190684.	4460.	622.	3.	comp.
U-28	12-24	190684.	4460.	6.	0.	comp.
U-28	24-36	190684.	4460.	0.	0.	
U-28	36-48	190684.	4460.	1.	0.	comp.
TOTALS			17840.		3.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-29	0-12	72219.	1689.	197.	0.	comp.
U-29	12-24	72219.	1689.	706.	1.	comp.
U-29	24-36	72219.	1689.	199.	0.	comp.
U-29	36-48	72219.	1689.	0.	0.	comp.
TOTALS			6757.		2.	
U-30	0-12	256393.	5997.	3.	0.	comp.
U-30	12-24	256393.	5997.	0.	0.	comp.
U-30	24-36	256393.	5997.	0.	0.	comp.
U-30	36-48	256393.	5997.	0.	0.	comp.
TOTALS			23988.		0.	
U-31	0-12	122949.	2876.	890.	3.	ave.
U-31	12-24	122949.	2876.	1.	0.	
U-31	24-36	122949.	2876.	3.	0.	comp.
U-31	36-48	122949.	2876.	1.	0.	comp.
TOTALS			11503.		3.	
U-32	0-12	82204.	1923.	79.	0.	comp.
U-32	12-24	82204.	1923.	1.	0.	comp.
U-32	24-36	82204.	1923.	0.	0.	comp.
U-32	36-48	82204.	1923.	0.	0.	comp.
TOTALS			7691.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-33	0-12	87356.	2043.	282.	1.	comp.
U-33	12-24	87356.	2043.	1.	0.	comp.
U-33	24-36	87356.	2043.	0.	0.	comp.
U-33	36-48	87356.	2043.	0.	0.	comp.
TOTALS			8173.		1.	
U-34	0-12	72689.	1700.	122.	0.	ave.
U-34	12-24	72689.	1700.	5.	0.	ND
U-34	24-36	72689.	1700.	1.	0.	comp.
U-34	36-48	72689.	1700.	0.	0.	comp.
TOTALS			6801.		0.	
U-35	0-12	401591.	9393.	556.	5.	comp.
U-35	12-24	401591.	9393.	5.	0.	comp.
U-35	24-36	401591.	9393.	0.	0.	comp.
U-35	36-48	401591.	9393.	1.	0.	comp.
TOTALS			37572.		5.	
U-36	0-12	126055.	2948.	8.	0.	
U-36	12-24	126055.	2948.	1.	0.	
U-36	24-36	126055.	2948.	0.	0.	ND
U-36	36-48	126055.	2948.	0.	0.	ND
TOTALS			11793.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-37	0-12	320487.	7496.	27.	0.	comp.
U-37	12-24	320487.	7496.	0.	0.	comp.
U-37	24-36	320487.	7496.	0.	0.	comp.
U-37	36-48	320487.	7496.	0.	0.	comp.
TOTALS			29984.		0.	
U-38	0-12	104334.	2440.	101.	0.	comp.
U-38	12-24	104334.	2440.	1.	0.	comp.
U-38	24-36	104334.	2440.	0.	0.	comp.
U-38	36-48	104334.	2440.	0.	0.	comp.
TOTALS			9761.		0.	
U-39	0-12	292678.	6846.	57.	0.	comp.
U-39	12-24	292678.	6846.	1.	0.	comp.
U-39	24-36	292678.	6846.	0.	0.	comp.
U-39	36-48	292678.	6846.	0.	0.	comp.
TOTALS			27382.		0.	
U-40	0-12	269469.	6303.	100.	1.	ave.
U-40	12-24	269469.	6303.	2.	0.	ND
U-40	24-36	269469.	6303.	0.	0.	comp.
U-40	36-48	269469.	6303.	0.	0.	comp.
TOTALS			25211.		1.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-41	0-12	297778.	6965.	111.	1.	comp.
U-41	12-24	297778.	6965.	1.	0.	comp.
U-41	24-36	297778.	6965.	0.	0.	comp.
U-41	36-48	297778.	6965.	0.	0.	comp.
TOTALS			27859.		1.	
U-42	0-12	128316.	3001.	7.	0.	comp.
U-42	12-24	128316.	3001.	0.	0.	comp.
U-42	24-36	128316.	3001.	0.	0.	comp.
U-42	36-48	128316.	3001.	0.	0.	comp.
TOTALS			12005.		0.	
U-43	0-12	177979.	4163.	43.	0.	comp.
U-43	12-24	177979.	4163.	0.	0.	comp.
U-43	24-36	177979.	4163.	0.	0.	comp.
U-43	36-48	177979.	4163.	0.	0.	comp.
TOTALS			16651.		0.	
U-44	0-12	289971.	6782.	34.	0.	comp.
U-44	12-24	289971.	6782.	0.	0.	comp.
U-44	24-36	289971.	6782.	1.	0.	comp.
U-44	36-48	289971.	6782.	0.	0.	comp.
TOTALS			27129.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-45	0-12	316797.	7410.	18.	0.	comp.
U-45	12-24	316797.	7410.	0.	0.	comp.
U-45	24-36	316797.	7410.	0.	0.	comp.
U-45	36-48	316797.	7410.	0.	0.	comp.
TOTALS			29639.		0.	
U-46	0-12	242622.	5675.	1.	0.	ave.
U-46	12-24	242622.	5675.	0.	0.	ND
U-46	24-36	242622.	5675.	0.	0.	comp.
U-46	36-48	242622.	5675.	0.	0.	comp.
TOTALS			22699.		0.	
U-47	0-12	315351.	7376.	18.	0.	comp.
U-47	12-24	315351.	7376.	0.	0.	comp.
U-47	24-36	315351.	7376.	0.	0.	comp.
U-47	36-48	315351.	7376.	0.	0.	comp.
TOTALS			29504.		0.	
U-48	0-12	228782.	5351.	9.	0.	comp.
U-48	12-24	228782.	5351.	0.	0.	comp.
U-48	24-36	228782.	5351.	0.	0.	comp.
U-48	36-48	228782.	5351.	0.	0.	comp.
TOTALS			21404.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1016/A1242

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-49	0-12	395428.	9249.	2.	0.	comp.
U-49	12-24	395428.	9249.	0.	0.	comp.
U-49	24-36	395428.	9249.	0.	0.	comp.
U-49	36-48	395428.	9249.	0.	0.	comp.
TOTALS			36995.		0.	
U-50	0-12	175704.	4110.	4.	0.	
U-50	12-24	175704.	4110.	0.	0.	
U-50	24-36	175704.	4110.	0.	0.	comp.
U-50	36-48	175704.	4110.	0.	0.	comp.
TOTALS			16438.		0.	
U-51	0-12	205371.	4804.	1.	0.	comp.
U-51	12-24	205371.	4804.	0.	0.	comp.
U-51	24-36	205371.	4804.	0.	0.	comp.
U-51	36-48	205371.	4804.	0.	0.	comp.
TOTALS			19214.		0.	

TOTAL PARAMETER WEIGHT IN 0"-12" = 181.0 tons

TOTAL PARAMETER WEIGHT IN 12"-24" = 3.3 tons

TOTAL PARAMETER WEIGHT IN 24"-36" = 0.8 tons

TOTAL PARAMETER WEIGHT IN 36"-48" = 0.3 tons

ESTIMATED TOTAL PARAMETER WEIGHT FOR ALL INTERVALS = 185.4 tons

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 1	0-12	242203.	5665.	141.	1.	comp.
U- 1	12-24	242203.	5665.	2.	0.	comp.
U- 1	24-36	242203.	5665.	0.	0.	comp.
U- 1	36-48	242203.	5665.	0.	0.	comp.
TOTALS			22660.		1.	
U- 2	0-12	202776.	4743.	56.	0.	comp.
U- 2	12-24	202776.	4743.	1.	0.	comp.
U- 2	24-36	202776.	4743.	0.	0.	comp.
U- 2	36-48	202776.	4743.	0.	0.	comp.
TOTALS			18971.		0.	
U- 3	0-12	119070.	2785.	44.	0.	comp.
U- 3	12-24	119070.	2785.	0.	0.	comp.
U- 3	24-36	119070.	2785.	0.	0.	comp.
U- 3	36-48	119070.	2785.	0.	0.	comp.
TOTALS			11140.		0.	
U- 4	0-12	134657.	3150.	121.	0.	comp.
U- 4	12-24	134657.	3150.	2.	0.	comp.
U- 4	24-36	134657.	3150.	0.	0.	comp.
U- 4	36-48	134657.	3150.	0.	0.	comp.
TOTALS			12598.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 5	0-12	194326.	4545.	0.	0.	ND
U- 5	12-24	194326.	4545.	0.	0.	ND
U- 5	24-36	194326.	4545.	0.	0.	comp.
U- 5	36-48	194326.	4545.	0.	0.	comp.
TOTALS			18181.		0.	
U- 6	0-12	57512.	1345.	5320.	7.	comp.
U- 6	12-24	57512.	1345.	79.	0.	comp.
U- 6	24-36	57512.	1345.	0.	0.	comp.
U- 6	36-48	57512.	1345.	0.	0.	comp.
TOTALS			5381.		7.	
U- 7	0-12	38541.	901.	0.	0.	ND
U- 7	12-24	38541.	901.	0.	0.	ND
U- 7	24-36	38541.	901.	0.	0.	ND
U- 7	36-48	38541.	901.	0.	0.	ND
TOTALS			3606.		0.	
U- 8	0-12	82413.	1928.	508.	1.	comp.
U- 8	12-24	82413.	1928.	8.	0.	comp.
U- 8	24-36	82413.	1928.	0.	0.	comp.
U- 8	36-48	82413.	1928.	0.	0.	comp.
TOTALS			7710.		1.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 9	0-12	132676.	3103.	384.	1.	comp.
U- 9	12-24	132676.	3103.	6.	0.	comp.
U- 9	24-36	132676.	3103.	0.	0.	comp.
U- 9	36-48	132676.	3103.	0.	0.	comp.
TOTALS			12413.		1.	
U-10	0-12	131656.	3079.	0.	0.	ND
U-10	12-24	131656.	3079.	0.	0.	ND
U-10	24-36	131656.	3079.	0.	0.	ND
U-10	36-48	131656.	3079.	0.	0.	comp.
TOTALS			12317.		0.	
U-11	0-12	111775.	2614.	856.	2.	comp.
U-11	12-24	111775.	2614.	0.	0.	comp.
U-11	24-36	111775.	2614.	0.	0.	comp.
U-11	36-48	111775.	2614.	0.	0.	comp.
TOTALS			10457.		2.	
U-12	0-12	72258.	1690.	27.	0.	comp.
U-12	12-24	72258.	1690.	0.	0.	comp.
U-12	24-36	72258.	1690.	0.	0.	comp.
U-12	36-48	72258.	1690.	0.	0.	comp.
TOTALS			6760.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-13	0-12	43222.	1011.	0.	0.	ND
U-13	12-24	43222.	1011.	0.	0.	ND
U-13	24-36	43222.	1011.	0.	0.	ND
U-13	36-48	43222.	1011.	0.	0.	ND
TOTALS			4044.		0.	
U-14	0-12	87195.	2039.	1.	0.	ND
U-14	12-24	87195.	2039.	1.	0.	ND
U-14	24-36	87195.	2039.	0.	0.	comp.
U-14	36-48	87195.	2039.	0.	0.	comp.
TOTALS			8158.		0.	
U-15	0-12	85856.	2008.	3900.	8.	comp.
U-15	12-24	85856.	2008.	8.	0.	comp.
U-15	24-36	85856.	2008.	0.	0.	comp.
U-15	36-48	85856.	2008.	0.	0.	comp.
TOTALS			8033.		8.	
U-16	0-12	78459.	1835.	7.	0.	comp.
U-16	12-24	78459.	1835.	0.	0.	comp.
U-16	24-36	78459.	1835.	0.	0.	comp.
U-16	36-48	78459.	1835.	0.	0.	comp.
TOTALS			7340.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-17	0-12	54272.	1269.	137.	0.	comp.
U-17	12-24	54272.	1269.	9.	0.	comp.
U-17	24-36	54272.	1269.	0.	0.	comp.
U-17	36-48	54272.	1269.	0.	0.	comp.
TOTALS			5078.		0.	
U-18	0-12	105457.	2467.	837.	2.	comp.
U-18	12-24	105457.	2467.	45.	0.	comp.
U-18	24-36	105457.	2467.	0.	0.	comp.
U-18	36-48	105457.	2467.	0.	0.	comp.
TOTALS			9866.		2.	
U-19	0-12	110478.	2584.	9.	0.	comp.
U-19	12-24	110478.	2584.	0.	0.	comp.
U-19	24-36	110478.	2584.	0.	0.	comp.
U-19	36-48	110478.	2584.	0.	0.	comp.
TOTALS			10336.		0.	
U-20	0-12	113701.	2659.	2.	0.	ND
U-20	12-24	113701.	2659.	6.	0.	ND
U-20	24-36	113701.	2659.	0.	0.	comp.
U-20	36-48	113701.	2659.	0.	0.	comp.
TOTALS			10638.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-21	0-12	159563.	3732.	7.	0.	comp.
U-21	12-24	159563.	3732.	0.	0.	comp.
U-21	24-36	159563.	3732.	0.	0.	comp.
U-21	36-48	159563.	3732.	0.	0.	comp.
TOTALS			14928.		0.	
U-22	0-12	118428.	2770.	8.	0.	comp.
U-22	12-24	118428.	2770.	0.	0.	comp.
U-22	24-36	118428.	2770.	0.	0.	comp.
U-22	36-48	118428.	2770.	0.	0.	comp.
TOTALS			11080.		0.	
U-23	0-12	174275.	4076.	44.	0.	comp.
U-23	12-24	174275.	4076.	1.	0.	comp.
U-23	24-36	174275.	4076.	0.	0.	comp.
U-23	36-48	174275.	4076.	0.	0.	comp.
TOTALS			16305.		0.	
U-24	0-12	178573.	4177.	14.	0.	comp.
U-24	12-24	178573.	4177.	0.	0.	comp.
U-24	24-36	178573.	4177.	0.	0.	comp.
U-24	36-48	178573.	4177.	0.	0.	comp.
TOTALS			16707.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-25	0-12	135037.	3158.	147.	0.	ND
U-25	12-24	135037.	3158.	0.	0.	ave.
U-25	24-36	135037.	3158.	0.	0.	comp
U-25	36-48	135037.	3158.	0.	0.	comp.
TOTALS			12634.		0.	
U-26	0-12	91695.	2145.	25.	0.	comp.
U-26	12-24	91695.	2145.	0.	0.	comp.
U-26	24-36	91695.	2145.	0.	0.	comp.
U-26	36-48	91695.	2145.	0.	0.	comp.
TOTALS			8579.		0.	
U-27	0-12	41442.	969.	0.	0.	ND
U-27	12-24	41442.	969.	0.	0.	ND
U-27	24-36	41442.	969.	0.	0.	comp.
U-27	36-48	41442.	969.	0.	0.	comp.
TOTALS			3877.		0.	
U-28	0-12	190684.	4460.	99.	0.	comp.
U-28	12-24	190684.	4460.	1.	0.	comp.
U-28	24-36	190684.	4460.	0.	0.	comp.
U-28	36-48	190684.	4460.	0.	0.	comp.
TOTALS			17840.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-29	0-12	72219.	1689.	31.	0.	comp.
U-29	12-24	72219.	1689.	173.	0.	comp.
U-29	24-36	72219.	1689.	0.	0.	comp.
U-29	36-48	72219.	1689.	0.	0.	comp.
TOTALS			6757.		0.	
U-30	0-12	256393.	5997.	0.	0.	comp.
U-30	12-24	256393.	5997.	0.	0.	comp.
U-30	24-36	256393.	5997.	0.	0.	comp.
U-30	36-48	256393.	5997.	0.	0.	comp.
TOTALS			23988.		0.	
U-31	0-12	122949.	2876.	153.	0.	ND
U-31	12-24	122949.	2876.	0.	0.	ND
U-31	24-36	122949.	2876.	0.	0.	comp.
U-31	36-48	122949.	2876.	0.	0.	comp.
TOTALS			11503.		0.	
U-32	0-12	82204.	1923.	13.	0.	comp.
U-32	12-24	82204.	1923.	0.	0.	comp.
U-32	24-36	82204.	1923.	0.	0.	comp.
U-32	36-48	82204.	1923.	0.	0.	comp.
TOTALS			7691.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-33	0-12	87356.	2043.	45.	0.	comp.
U-33	12-24	87356.	2043.	0.	0.	comp.
U-33	24-36	87356.	2043.	0.	0.	comp.
U-33	36-48	87356.	2043.	0.	0.	comp.
TOTALS			8173.		0.	
U-34	0-12	72689.	1700.	429.	1.	ave.
U-34	12-24	72689.	1700.	12.	0.	
U-34	24-36	72689.	1700.	0.	0.	comp.
U-34	36-48	72689.	1700.	0.	0.	comp.
TOTALS			6801.		1.	
U-35	0-12	401591.	9393.	88.	1.	comp.
U-35	12-24	401591.	9393.	1.	0.	comp.
U-35	24-36	401591.	9393.	0.	0.	comp.
U-35	36-48	401591.	9393.	0.	0.	comp.
TOTALS			37572.		1.	
U-36	0-12	126055.	2948.	0.	0.	ND
U-36	12-24	126055.	2948.	0.	0.	ND
U-36	24-36	126055.	2948.	0.	0.	ND
U-36	36-48	126055.	2948.	0.	0.	ND
TOTALS			11793.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-37	0-12	320487.	7496.	4.	0.	comp.
U-37	12-24	320487.	7496.	0.	0.	comp.
U-37	24-36	320487.	7496.	0.	0.	comp.
U-37	36-48	320487.	7496.	0.	0.	comp.
TOTALS			29984.		0.	
U-38	0-12	104334.	2440.	16.	0.	comp.
U-38	12-24	104334.	2440.	0.	0.	comp.
U-38	24-36	104334.	2440.	0.	0.	comp.
U-38	36-48	104334.	2440.	0.	0.	comp.
TOTALS			9761.		0.	
U-39	0-12	292678.	6846.	9.	0.	comp.
U-39	12-24	292678.	6846.	0.	0.	comp.
U-39	24-36	292678.	6846.	0.	0.	comp.
U-39	36-48	292678.	6846.	0.	0.	comp.
TOTALS			27382.		0.	
U-40	0-12	269469.	6303.	4.	0.	ND
U-40	12-24	269469.	6303.	7.	0.	
U-40	24-36	269469.	6303.	0.	0.	comp.
U-40	36-48	269469.	6303.	0.	0.	comp.
TOTALS			25211.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-41	0-12	297778.	6965.	18.	0.	comp.
U-41	12-24	297778.	6965.	0.	0.	comp.
U-41	24-36	297778.	6965.	0.	0.	comp.
U-41	36-48	297778.	6965.	0.	0.	comp.
TOTALS			27859.		0.	
U-42	0-12	128316.	3001.	1.	0.	comp.
U-42	12-24	128316.	3001.	0.	0.	comp.
U-42	24-36	128316.	3001.	0.	0.	comp.
U-42	36-48	128316.	3001.	0.	0.	comp.
TOTALS			12005.		0.	
U-43	0-12	177979.	4163.	7.	0.	comp.
U-43	12-24	177979.	4163.	0.	0.	comp.
U-43	24-36	177979.	4163.	0.	0.	comp.
U-43	36-48	177979.	4163.	0.	0.	comp.
TOTALS			16651.		0.	
U-44	0-12	289971.	6782.	5.	0.	comp.
U-44	12-24	289971.	6782.	0.	0.	comp.
U-44	24-36	289971.	6782.	0.	0.	comp.
U-44	36-48	289971.	6782.	0.	0.	comp.
TOTALS			27129.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-45	0-12	316797.	7410.	3.	0.	comp.
U-45	12-24	316797.	7410.	0.	0.	comp.
U-45	24-36	316797.	7410.	0.	0.	comp.
U-45	36-48	316797.	7410.	0.	0.	comp.
TOTALS			29639.		0.	
U-46	0-12	242622.	5675.	5.	0.	ave.
U-46	12-24	242622.	5675.	0.	0.	ND
U-46	24-36	242622.	5675.	0.	0.	comp.
U-46	36-48	242622.	5675.	0.	0.	comp.
TOTALS			22699.		0.	
U-47	0-12	315351.	7376.	3.	0.	comp.
U-47	12-24	315351.	7376.	0.	0.	comp.
U-47	24-36	315351.	7376.	0.	0.	comp.
U-47	36-48	315351.	7376.	0.	0.	comp.
TOTALS			29504.		0.	
U-48	0-12	228782.	5351.	1.	0.	comp.
U-48	12-24	228782.	5351.	0.	0.	comp.
U-48	24-36	228782.	5351.	0.	0.	comp.
U-48	36-48	228782.	5351.	0.	0.	comp.
TOTALS			21404.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1248

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-49	0-12	395428.	9249.	0.	0.	comp.
U-49	12-24	395428.	9249.	0.	0.	comp.
U-49	24-36	395428.	9249.	0.	0.	comp.
U-49	36-48	395428.	9249.	0.	0.	comp.
TOTALS			36995.		0.	
U-50	0-12	175704.	4110.	2.	0.	ND
U-50	12-24	175704.	4110.	0.	0.	ND
U-50	24-36	175704.	4110.	0.	0.	comp.
U-50	36-48	175704.	4110.	0.	0.	comp.
TOTALS			16438.		0.	
U-51	0-12	205371.	4804.	0.	0.	comp.
U-51	12-24	205371.	4804.	0.	0.	comp.
U-51	24-36	205371.	4804.	0.	0.	comp.
U-51	36-48	205371.	4804.	0.	0.	comp.
TOTALS			19214.		0.	

TOTAL PARAMETER WEIGHT IN 0"-12" = 27.1 tons

TOTAL PARAMETER WEIGHT IN 12"-24" = 0.7 tons

TOTAL PARAMETER WEIGHT IN 24"-36" = 0.0 tons

TOTAL PARAMETER WEIGHT IN 36"-48" = 0.0 tons

ESTIMATED TOTAL PARAMETER WEIGHT FOR ALL INTERVALS = 27.9 tons

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 1	0-12	242203.	5665.	380.	2.	comp.
U- 1	12-24	242203.	5665.	7.	0.	comp.
U- 1	24-36	242203.	5665.	2.	0.	comp.
U- 1	36-48	242203.	5665.	2.	0.	comp.
TOTALS			22660.		2.	
U- 2	0-12	202776.	4743.	152.	1.	comp.
U- 2	12-24	202776.	4743.	3.	0.	comp.
U- 2	24-36	202776.	4743.	0.	0.	comp.
U- 2	36-48	202776.	4743.	1.	0.	comp.
TOTALS			18971.		1.	
U- 3	0-12	119070.	2785.	119.	0.	comp.
U- 3	12-24	119070.	2785.	1.	0.	comp.
U- 3	24-36	119070.	2785.	0.	0.	comp.
U- 3	36-48	119070.	2785.	1.	0.	comp.
TOTALS			11140.		0.	
U- 4	0-12	134657.	3150.	328.	1.	comp.
U- 4	12-24	134657.	3150.	6.	0.	comp.
U- 4	24-36	134657.	3150.	0.	0.	comp.
U- 4	36-48	134657.	3150.	2.	0.	comp.
TOTALS			12598.		1.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 5	0-12	194326.	4545.	0.	0.	ND
U- 5	12-24	194326.	4545.	0.	0.	ND
U- 5	24-36	194326.	4545.	2.	0.	comp.
U- 5	36-48	194326.	4545.	0.	0.	comp.
TOTALS			18181.		0.	
U- 6	0-12	57512.	1345.	14364.	19.	comp.
U- 6	12-24	57512.	1345.	258.	0.	comp.
U- 6	24-36	57512.	1345.	96.	0.	comp.
U- 6	36-48	57512.	1345.	76.	0.	comp.
TOTALS			5381.		20.	
U- 7	0-12	38541.	901.	3100.	3.	
U- 7	12-24	38541.	901.	590.	1.	
U- 7	24-36	38541.	901.	510.	0.	
U- 7	36-48	38541.	901.	130.	0.	
TOTALS			3606.		4.	
U- 8	0-12	82413.	1928.	1372.	3.	comp.
U- 8	12-24	82413.	1928.	25.	0.	comp.
U- 8	24-36	82413.	1928.	9.	0.	comp.
U- 8	36-48	82413.	1928.	7.	0.	comp.
TOTALS			7710.		3.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 9	0-12	132676.	3103.	1036.	3.	comp.
U- 9	12-24	132676.	3103.	19.	0.	comp.
U- 9	24-36	132676.	3103.	7.	0.	comp.
U- 9	36-48	132676.	3103.	5.	0.	comp.
TOTALS			12413.		3.	
U-10	0-12	131656.	3079.	820.	3.	
U-10	12-24	131656.	3079.	31.	0.	
U-10	24-36	131656.	3079.	3.	0.	
U-10	36-48	131656.	3079.	2.	0.	comp.
TOTALS			12317.		3.	
U-11	0-12	111775.	2614.	2311.	6.	comp.
U-11	12-24	111775.	2614.	0.	0.	comp.
U-11	24-36	111775.	2614.	15.	0.	comp.
U-11	36-48	111775.	2614.	12.	0.	comp.
TOTALS			10457.		6.	
U-12	0-12	72258.	1690.	72.	0.	comp.
U-12	12-24	72258.	1690.	1.	0.	comp.
U-12	24-36	72258.	1690.	0.	0.	comp.
U-12	36-48	72258.	1690.	0.	0.	comp.
TOTALS			6760.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-13	0-12	43222.	1011.	350.	0.	
U-13	12-24	43222.	1011.	75.	0.	
U-13	24-36	43222.	1011.	1.	0.	
U-13	36-48	43222.	1011.	1.	0.	ND
TOTALS			4044.		0.	
U-14	0-12	87195.	2039.	2.	0.	ND
U-14	12-24	87195.	2039.	1.	0.	ND
U-14	24-36	87195.	2039.	1.	0.	comp.
U-14	36-48	87195.	2039.	1.	0.	comp.
TOTALS			8158.		0.	
U-15	0-12	85856.	2008.	10530.	21.	comp.
U-15	12-24	85856.	2008.	26.	0.	comp.
U-15	24-36	85856.	2008.	0.	0.	comp.
U-15	36-48	85856.	2008.	56.	0.	comp.
TOTALS			8033.		21.	
U-16	0-12	78459.	1835.	19.	0.	comp.
U-16	12-24	78459.	1835.	0.	0.	comp.
U-16	24-36	78459.	1835.	0.	0.	comp.
U-16	36-48	78459.	1835.	0.	0.	comp.
TOTALS			7340.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-17	0-12	54272.	1269.	370.	0.	comp.
U-17	12-24	54272.	1269.	28.	0.	comp.
U-17	24-36	54272.	1269.	2.	0.	comp.
U-17	36-48	54272.	1269.	2.	0.	comp.
TOTALS			5078.		1.	
U-18	0-12	105457.	2467.	2260.	6.	comp.
U-18	12-24	105457.	2467.	146.	0.	comp.
U-18	24-36	105457.	2467.	15.	0.	comp.
U-18	36-48	105457.	2467.	12.	0.	comp.
TOTALS			9866.		6.	
U-19	0-12	110478.	2584.	25.	0.	comp.
U-19	12-24	110478.	2584.	0.	0.	comp.
U-19	24-36	110478.	2584.	0.	0.	comp.
U-19	36-48	110478.	2584.	0.	0.	comp.
TOTALS			10336.		0.	
U-20	0-12	113701.	2659.	3.	0.	ND
U-20	12-24	113701.	2659.	9.	0.	
U-20	24-36	113701.	2659.	2.	0.	comp.
U-20	36-48	113701.	2659.	2.	0.	comp.
TOTALS			10638.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-21	0-12	159563.	3732.	18.	0.	comp.
U-21	12-24	159563.	3732.	0.	0.	comp.
U-21	24-36	159563.	3732.	0.	0.	comp.
U-21	36-48	159563.	3732.	0.	0.	comp.
TOTALS			14928.		0.	
U-22	0-12	118428.	2770.	21.	0.	comp.
U-22	12-24	118428.	2770.	0.	0.	comp.
U-22	24-36	118428.	2770.	0.	0.	comp.
U-22	36-48	118428.	2770.	0.	0.	comp.
TOTALS			11080.		0.	
U-23	0-12	174275.	4076.	119.	0.	comp.
U-23	12-24	174275.	4076.	2.	0.	comp.
U-23	24-36	174275.	4076.	0.	0.	comp.
U-23	36-48	174275.	4076.	1.	0.	comp.
TOTALS			16305.		0.	
U-24	0-12	178573.	4177.	37.	0.	comp.
U-24	12-24	178573.	4177.	0.	0.	comp.
U-24	24-36	178573.	4177.	0.	0.	comp.
U-24	36-48	178573.	4177.	0.	0.	comp.
TOTALS			16707.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-25	0-12	135037.	3158.	224.	1.	ave.
U-25	12-24	135037.	3158.	1.	0.	ave.
U-25	24-36	135037.	3158.	1.	0.	comp.
U-25	36-48	135037.	3158.	1.	0.	comp.
TOTALS			12634.		1.	
U-26	0-12	91695.	2145.	68.	0.	comp.
U-26	12-24	91695.	2145.	1.	0.	comp.
U-26	24-36	91695.	2145.	0.	0.	comp.
U-26	36-48	91695.	2145.	0.	0.	comp.
TOTALS			8579.		0.	
U-27	0-12	41442.	969.	170.	0.	
U-27	12-24	41442.	969.	4.	0.	
U-27	24-36	41442.	969.	0.	0.	
U-27	36-48	41442.	969.	0.	0.	comp.
TOTALS			3877.		0.	
U-28	0-12	190684.	4460.	266.	1.	comp.
U-28	12-24	190684.	4460.	5.	0.	comp.
U-28	24-36	190684.	4460.	0.	0.	comp.
U-28	36-48	190684.	4460.	1.	0.	comp.
TOTALS			17840.		1.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-29	0-12	72219.	1689.	84.	0.	comp.
U-29	12-24	72219.	1689.	562.	1.	comp.
U-29	24-36	72219.	1689.	176.	0.	comp.
U-29	36-48	72219.	1689.	0.	0.	comp.
TOTALS			6757.		1.	
U-30	0-12	256393.	5997.	1.	0.	comp.
U-30	12-24	256393.	5997.	0.	0.	comp.
U-30	24-36	256393.	5997.	0.	0.	comp.
U-30	36-48	256393.	5997.	0.	0.	comp.
TOTALS			23988.		0.	
U-31	0-12	122949.	2876.	380.	1.	
U-31	12-24	122949.	2876.	2.	0.	
U-31	24-36	122949.	2876.	3.	0.	comp.
U-31	36-48	122949.	2876.	2.	0.	comp.
TOTALS			11503.		1.	
U-32	0-12	82204.	1923.	34.	0.	comp.
U-32	12-24	82204.	1923.	1.	0.	comp.
U-32	24-36	82204.	1923.	0.	0.	comp.
U-32	36-48	82204.	1923.	0.	0.	comp.
TOTALS			7691.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-33	0-12	87356.	2043.	121.	0.	comp.
U-33	12-24	87356.	2043.	1.	0.	comp.
U-33	24-36	87356.	2043.	0.	0.	comp.
U-33	36-48	87356.	2043.	1.	0.	comp.
TOTALS			8173.		0.	
U-34	0-12	72689.	1700.	239.	0.	ave.
U-34	12-24	72689.	1700.	21.	0.	
U-34	24-36	72689.	1700.	1.	0.	comp.
U-34	36-48	72689.	1700.	1.	0.	comp.
TOTALS			6801.		0.	
U-35	0-12	401591.	9393.	238.	2.	comp.
U-35	12-24	401591.	9393.	4.	0.	comp.
U-35	24-36	401591.	9393.	0.	0.	comp.
U-35	36-48	401591.	9393.	1.	0.	comp.
TOTALS			37572.		2.	
U-36	0-12	126055.	2948.	6.	0.	
U-36	12-24	126055.	2948.	0.	0.	
U-36	24-36	126055.	2948.	0.	0.	ND
U-36	36-48	126055.	2948.	1.	0.	ND
TOTALS			11793.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-37	0-12	320487.	7496.	11.	0.	comp.
U-37	12-24	320487.	7496.	0.	0.	comp.
U-37	24-36	320487.	7496.	0.	0.	comp.
U-37	36-48	320487.	7496.	0.	0.	comp.
TOTALS			29984.		0.	
U-38	0-12	104334.	2440.	43.	0.	comp.
U-38	12-24	104334.	2440.	1.	0.	comp.
U-38	24-36	104334.	2440.	0.	0.	comp.
U-38	36-48	104334.	2440.	0.	0.	comp.
TOTALS			9761.		0.	
U-39	0-12	292678.	6846.	24.	0.	comp.
U-39	12-24	292678.	6846.	1.	0.	comp.
U-39	24-36	292678.	6846.	0.	0.	comp.
U-39	36-48	292678.	6846.	0.	0.	comp.
TOTALS			27382.		0.	
U-40	0-12	269469.	6303.	68.	0.	ave.
U-40	12-24	269469.	6303.	5.	0.	
U-40	24-36	269469.	6303.	0.	0.	comp.
U-40	36-48	269469.	6303.	0.	0.	comp.
TOTALS			25211.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-41	0-12	297778.	6965.	48.	0.	comp.
U-41	12-24	297778.	6965.	1.	0.	comp.
U-41	24-36	297778.	6965.	0.	0.	comp.
U-41	36-48	297778.	6965.	0.	0.	comp.
TOTALS			27859.		0.	
U-42	0-12	128316.	3001.	3.	0.	comp.
U-42	12-24	128316.	3001.	0.	0.	comp.
U-42	24-36	128316.	3001.	0.	0.	comp.
U-42	36-48	128316.	3001.	0.	0.	comp.
TOTALS			12005.		0.	
U-43	0-12	177979.	4163.	19.	0.	comp.
U-43	12-24	177979.	4163.	0.	0.	comp.
U-43	24-36	177979.	4163.	0.	0.	comp.
U-43	36-48	177979.	4163.	0.	0.	comp.
TOTALS			16651.		0.	
U-44	0-12	289971.	6782.	14.	0.	comp.
U-44	12-24	289971.	6782.	0.	0.	comp.
U-44	24-36	289971.	6782.	1.	0.	comp.
U-44	36-48	289971.	6782.	0.	0.	comp.
TOTALS			27129.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-45	0-12	316797.	7410.	8.	0.	comp.
U-45	12-24	316797.	7410.	0.	0.	comp.
U-45	24-36	316797.	7410.	0.	0.	comp.
U-45	36-48	316797.	7410.	0.	0.	comp.
TOTALS			29639.		0.	
U-46	0-12	242622.	5675.	3.	0.	ave.
U-46	12-24	242622.	5675.	0.	0.	
U-46	24-36	242622.	5675.	0.	0.	comp.
U-46	36-48	242622.	5675.	0.	0.	comp.
TOTALS			22699.		0.	
U-47	0-12	315351.	7376.	8.	0.	comp.
U-47	12-24	315351.	7376.	0.	0.	comp.
U-47	24-36	315351.	7376.	0.	0.	comp.
U-47	36-48	315351.	7376.	0.	0.	comp.
TOTALS			29504.		0.	
U-48	0-12	228782.	5351.	4.	0.	comp.
U-48	12-24	228782.	5351.	0.	0.	comp.
U-48	24-36	228782.	5351.	0.	0.	comp.
U-48	36-48	228782.	5351.	0.	0.	comp.
TOTALS			21404.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - A1254

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-49	0-12	395428.	9249.	1.	0.	comp.
U-49	12-24	395428.	9249.	0.	0.	comp.
U-49	24-36	395428.	9249.	0.	0.	comp.
U-49	36-48	395428.	9249.	0.	0.	comp.
TOTALS			36995.		0.	
U-50	0-12	175704.	4110.	1.	0.	
U-50	12-24	175704.	4110.	0.	0.	
U-50	24-36	175704.	4110.	0.	0.	comp.
U-50	36-48	175704.	4110.	0.	0.	comp.
TOTALS			16438.		0.	
U-51	0-12	205371.	4804.	1.	0.	comp.
U-51	12-24	205371.	4804.	0.	0.	comp.
U-51	24-36	205371.	4804.	0.	0.	comp.
U-51	36-48	205371.	4804.	0.	0.	comp.
TOTALS			19214.		0.	

TOTAL PARAMETER WEIGHT IN 0"-12" = 77.2 tons

TOTAL PARAMETER WEIGHT IN 12"-24" = 2.8 tons

TOTAL PARAMETER WEIGHT IN 24"-36" = 1.1 tons

TOTAL PARAMETER WEIGHT IN 36"-48" = 0.5 tons

ESTIMATED TOTAL PARAMETER WEIGHT FOR ALL INTERVALS = 81.7 tons

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 1	0-12	242203.	5665.	1407.	8.	ext.
U- 1	12-24	242203.	5665.	17.	0.	est.
U- 1	24-36	242203.	5665.	5.	0.	est.
U- 1	36-48	242203.	5665.	3.	0.	est.
TOTALS			22660.		8.	
U- 2	0-12	202776.	4743.	564.	3.	ext.
U- 2	12-24	202776.	4743.	7.	0.	est.
U- 2	24-36	202776.	4743.	0.	0.	
U- 2	36-48	202776.	4743.	1.	0.	est.
TOTALS			18971.		3.	
U- 3	0-12	119070.	2785.	440.	1.	
U- 3	12-24	119070.	2785.	2.	0.	
U- 3	24-36	119070.	2785.	0.	0.	
U- 3	36-48	119070.	2785.	1.	0.	est.
TOTALS			11140.		1.	
U- 4	0-12	134657.	3150.	1214.	4.	ext.
U- 4	12-24	134657.	3150.	15.	0.	est.
U- 4	24-36	134657.	3150.	0.	0.	
U- 4	36-48	134657.	3150.	3.	0.	est.
TOTALS			12598.		4.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 5	0-12	194326.	4545.	246.	1.	ave.
U- 5	12-24	194326.	4545.	2.	0.	
U- 5	24-36	194326.	4545.	5.	0.	est.
U- 5	36-48	194326.	4545.	0.	0.	est.
TOTALS			18181.		1.	
U- 6	0-12	57512.	1345.	53200.	72.	ext.
U- 6	12-24	57512.	1345.	662.	1.	est.
U- 6	24-36	57512.	1345.	204.	0.	est.
U- 6	36-48	57512.	1345.	114.	0.	est.
TOTALS			5381.		73.	
U- 7	0-12	38541.	901.	9800.	9.	
U- 7	12-24	38541.	901.	1110.	1.	
U- 7	24-36	38541.	901.	630.	1.	
U- 7	36-48	38541.	901.	194.	0.	
TOTALS			3606.		11.	
U- 8	0-12	82413.	1928.	5080.	10.	ext.
U- 8	12-24	82413.	1928.	63.	0.	est.
U- 8	24-36	82413.	1928.	19.	0.	est.
U- 8	36-48	82413.	1928.	11.	0.	est.
TOTALS			7710.		10.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U- 9	0-12	132676.	3103.	3836.	12.	adj.
U- 9	12-24	132676.	3103.	48.	0.	est.
U- 9	24-36	132676.	3103.	15.	0.	est.
U- 9	36-48	132676.	3103.	8.	0.	est.
TOTALS			12413.		12.	
U-10	0-12	131656.	3079.	1460.	4.	
U-10	12-24	131656.	3079.	57.	0.	
U-10	24-36	131656.	3079.	9.	0.	
U-10	36-48	131656.	3079.	3.	0.	est.
TOTALS			12317.		5.	
U-11	0-12	111775.	2614.	8560.	22.	
U-11	12-24	111775.	2614.	1.	0.	
U-11	24-36	111775.	2614.	33.	0.	est.
U-11	36-48	111775.	2614.	18.	0.	est.
TOTALS			10457.		23.	
U-12	0-12	72258.	1690.	268.	0.	ext.
U-12	12-24	72258.	1690.	3.	0.	est.
U-12	24-36	72258.	1690.	1.	0.	est.
U-12	36-48	72258.	1690.	1.	0.	est.
TOTALS			6760.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-13	0-12	43222.	1011.	2150.	2.	
U-13	12-24	43222.	1011.	147.	0.	
U-13	24-36	43222.	1011.	21.	0.	
U-13	36-48	43222.	1011.	1.	0.	ND
TOTALS			4044.		2.	
U-14	0-12	87195.	2039.	578.	1.	ave.
U-14	12-24	87195.	2039.	16.	0.	
U-14	24-36	87195.	2039.	2.	0.	est.
U-14	36-48	87195.	2039.	1.	0.	est.
TOTALS			8158.		1.	
U-15	0-12	85856.	2008.	39000.	78.	ext.
U-15	12-24	85856.	2008.	66.	0.	
U-15	24-36	85856.	2008.	1.	0.	
U-15	36-48	85856.	2008.	83.	0.	est.
TOTALS			8033.		79.	
U-16	0-12	78459.	1835.	72.	0.	ext.
U-16	12-24	78459.	1835.	1.	0.	est.
U-16	24-36	78459.	1835.	0.	0.	est.
U-16	36-48	78459.	1835.	0.	0.	est.
TOTALS			7340.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-17	0-12	54272.	1269.	1370.	2.	
U-17	12-24	54272.	1269.	73.	0.	
U-17	24-36	54272.	1269.	5.	0.	est.
U-17	36-48	54272.	1269.	3.	0.	est.
TOTALS			5078.		2.	
U-18	0-12	105457.	2467.	8370.	21.	
U-18	12-24	105457.	2467.	3740.	9.	
U-18	24-36	105457.	2467.	32.	0.	est.
U-18	36-48	105457.	2467.	18.	0.	est.
TOTALS			9866.		30.	
U-19	0-12	110478.	2584.	93.	0.	ext.
U-19	12-24	110478.	2584.	1.	0.	est.
U-19	24-36	110478.	2584.	0.	0.	est.
U-19	36-48	110478.	2584.	0.	0.	est.
TOTALS			10336.		0.	
U-20	0-12	113701.	2659.	1130.	3.	ext.
U-20	12-24	113701.	2659.	33.	0.	
U-20	24-36	113701.	2659.	4.	0.	est.
U-20	36-48	113701.	2659.	2.	0.	est.
TOTALS			10638.		3.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-21	0-12	159563.	3732.	66.	0.	ext.
U-21	12-24	159563.	3732.	1.	0.	est.
U-21	24-36	159563.	3732.	0.	0.	
U-21	36-48	159563.	3732.	0.	0.	est.
TOTALS			14928.		0.	
U-22	0-12	118428.	2770.	78.	0.	ext.
U-22	12-24	118428.	2770.	1.	0.	est.
U-22	24-36	118428.	2770.	0.	0.	est.
U-22	36-48	118428.	2770.	0.	0.	est.
TOTALS			11080.		0.	
U-23	0-12	174275.	4076.	441.	2.	ext.
U-23	12-24	174275.	4076.	5.	0.	est.
U-23	24-36	174275.	4076.	1.	0.	
U-23	36-48	174275.	4076.	1.	0.	est.
TOTALS			16305.		2.	
U-24	0-12	178573.	4177.	139.	1.	
U-24	12-24	178573.	4177.	0.	0.	
U-24	24-36	178573.	4177.	0.	0.	est.
U-24	36-48	178573.	4177.	0.	0.	est.
TOTALS			16707.		1.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-25	0-12	135037.	3158.	978.	3.	ave.
U-25	12-24	135037.	3158.	3.	0.	ave.
U-25	24-36	135037.	3158.	3.	0.	est.
U-25	36-48	135037.	3158.	2.	0.	est.
TOTALS			12634.		3.	
U-26	0-12	91695.	2145.	252.	1.	ave.
U-26	12-24	91695.	2145.	3.	0.	est.
U-26	24-36	91695.	2145.	1.	0.	est.
U-26	36-48	91695.	2145.	0.	0.	est.
TOTALS			8579.		1.	
U-27	0-12	41442.	969.	430.	0.	
U-27	12-24	41442.	969.	8.	0.	
U-27	24-36	41442.	969.	1.	0.	
U-27	36-48	41442.	969.	1.	0.	
TOTALS			3877.		0.	
U-28	0-12	190684.	4460.	987.	4.	ext.
U-28	12-24	190684.	4460.	12.	0.	est.
U-28	24-36	190684.	4460.	0.	0.	ND
U-28	36-48	190684.	4460.	2.	0.	est.
TOTALS			17840.		4.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-29	0-12	72219.	1689.	312.	1.	
U-29	12-24	72219.	1689.	1440.	2.	
U-29	24-36	72219.	1689.	375.	1.	
U-29	36-48	72219.	1689.	1.	0.	est.
TOTALS			6757.		4.	
U-30	0-12	256393.	5997.	5.	0.	ext.
U-30	12-24	256393.	5997.	0.	0.	est.
U-30	24-36	256393.	5997.	0.	0.	est.
U-30	36-48	256393.	5997.	0.	0.	est.
TOTALS			23988.		0.	
U-31	0-12	122949.	2876.	1422.	4.	
U-31	12-24	122949.	2876.	3.	0.	
U-31	24-36	122949.	2876.	5.	0.	est.
U-31	36-48	122949.	2876.	3.	0.	est.
TOTALS			11503.		4.	
U-32	0-12	82204.	1923.	126.	0.	
U-32	12-24	82204.	1923.	2.	0.	est.
U-32	24-36	82204.	1923.	0.	0.	
U-32	36-48	82204.	1923.	0.	0.	est.
TOTALS			7691.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-33	0-12	87356.	2043.	448.	1.	
U-33	12-24	87356.	2043.	2.	0.	
U-33	24-36	87356.	2043.	0.	0.	
U-33	36-48	87356.	2043.	1.	0.	est.
TOTALS			8173.		1.	
U-34	0-12	72689.	1700.	754.	1.	ave.
U-34	12-24	72689.	1700.	38.	0.	
U-34	24-36	72689.	1700.	3.	0.	est.
U-34	36-48	72689.	1700.	2.	0.	est.
TOTALS			6801.		1.	
U-35	0-12	401591.	9393.	882.	8.	ext.
U-35	12-24	401591.	9393.	11.	0.	est.
U-35	24-36	401591.	9393.	0.	0.	
U-35	36-48	401591.	9393.	2.	0.	est.
TOTALS			37572.		8.	
U-36	0-12	126055.	2948.	14.	0.	
U-36	12-24	126055.	2948.	1.	0.	
U-36	24-36	126055.	2948.	0.	0.	
U-36	36-48	126055.	2948.	1.	0.	ND
TOTALS			11793.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-37	0-12	320487.	7496.	42.	0.	
U-37	12-24	320487.	7496.	0.	0.	
U-37	24-36	320487.	7496.	0.	0.	est.
U-37	36-48	320487.	7496.	0.	0.	est.
TOTALS			29984.		0.	
U-38	0-12	104334.	2440.	160.	0.	
U-38	12-24	104334.	2440.	2.	0.	est.
U-38	24-36	104334.	2440.	0.	0.	
U-38	36-48	104334.	2440.	0.	0.	est.
TOTALS			9761.		0.	
U-39	0-12	292678.	6846.	91.	1.	
U-39	12-24	292678.	6846.	2.	0.	
U-39	24-36	292678.	6846.	0.	0.	est.
U-39	36-48	292678.	6846.	0.	0.	est.
TOTALS			27382.		1.	
U-40	0-12	269469.	6303.	172.	1.	ave.
U-40	12-24	269469.	6303.	13.	0.	
U-40	24-36	269469.	6303.	1.	0.	est.
U-40	36-48	269469.	6303.	0.	0.	est.
TOTALS			25211.		1.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-41	0-12	297778.	6965.	177.	1.	
U-41	12-24	297778.	6965.	2.	0.	est.
U-41	24-36	297778.	6965.	0.	0.	
U-41	36-48	297778.	6965.	0.	0.	est.
TOTALS			27859.		1.	
U-42	0-12	128316.	3001.	11.	0.	ext.
U-42	12-24	128316.	3001.	0.	0.	est.
U-42	24-36	128316.	3001.	0.	0.	est.
U-42	36-48	128316.	3001.	0.	0.	est.
TOTALS			12005.		0.	
U-43	0-12	177979.	4163.	69.	0.	ext.
U-43	12-24	177979.	4163.	1.	0.	est.
U-43	24-36	177979.	4163.	0.	0.	est.
U-43	36-48	177979.	4163.	0.	0.	est.
TOTALS			16651.		0.	
U-44	0-12	289971.	6782.	53.	0.	ext.
U-44	12-24	289971.	6782.	1.	0.	est.
U-44	24-36	289971.	6782.	1.	0.	
U-44	36-48	289971.	6782.	0.	0.	est.
TOTALS			27129.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-45	0-12	316797.	7410.	28.	0.	ext.
U-45	12-24	316797.	7410.	0.	0.	est.
U-45	24-36	316797.	7410.	0.	0.	est.
U-45	36-48	316797.	7410.	0.	0.	est.
TOTALS			29639.		0.	
U-46	0-12	242622.	5675.	8.	0.	ave.
U-46	12-24	242622.	5675.	1.	0.	
U-46	24-36	242622.	5675.	0.	0.	est.
U-46	36-48	242622.	5675.	0.	0.	est.
TOTALS			22699.		0.	
U-47	0-12	315351.	7376.	29.	0.	
U-47	12-24	315351.	7376.	0.	0.	est.
U-47	24-36	315351.	7376.	0.	0.	
U-47	36-48	315351.	7376.	0.	0.	est.
TOTALS			29504.		0.	
U-48	0-12	228782.	5351.	15.	0.	ext.
U-48	12-24	228782.	5351.	0.	0.	est.
U-48	24-36	228782.	5351.	0.	0.	est.
U-48	36-48	228782.	5351.	0.	0.	est.
TOTALS			21404.		0.	

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DATA SUMMARY FOR UPPER ESTUARY

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PARAMETER - TOTAL PCB's

GRID	DEPTH INTERVAL (inches)	GRID AREA (sq. ft.)	DRY SOIL WT. (ton)	CONCEN. (mg/kg)	PARAMETER WT. (ton)	NOTES
U-49	0-12	395428.	9249.	3.	0.	
U-49	12-24	395428.	9249.	0.	0.	est.
U-49	24-36	395428.	9249.	0.	0.	est.
U-49	36-48	395428.	9249.	0.	0.	est.
TOTALS			36995.		0.	
U-50	0-12	175704.	4110.	7.	0.	
U-50	12-24	175704.	4110.	1.	0.	
U-50	24-36	175704.	4110.	0.	0.	est.
U-50	36-48	175704.	4110.	0.	0.	est.
TOTALS			16438.		0.	
U-51	0-12	205371.	4804.	2.	0.	
U-51	12-24	205371.	4804.	0.	0.	est.
U-51	24-36	205371.	4804.	0.	0.	
U-51	36-48	205371.	4804.	0.	0.	est.
TOTALS			19214.		0.	

TOTAL PARAMETER WEIGHT IN 0"-12" = 285.3 tons

TOTAL PARAMETER WEIGHT IN 12"-24" = 15.1 tons

TOTAL PARAMETER WEIGHT IN 24"-36" = 1.9 tons

TOTAL PARAMETER WEIGHT IN 36"-48" = 0.8 tons

ESTIMATED TOTAL PARAMETER WEIGHT FOR ALL INTERVALS = 303.1 tons